

CURBSIDE RECYCLING PILOT PROGRAM EVALUATION

**Mililani and Hawaii Kai Pilot Curbside Recycling Programs
November 1, 2007 through April 30, 2008**

Prepared and submitted by:
Department of Environmental Services
City and County of Honolulu
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Curbside Recycling Pilot Program Evaluation

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Executive Summary

Purpose

The City and County of Honolulu's Department of Environmental Services launched a pilot curbside recycling program in October 2007 to test the feasibility of a three-bin collection system for refuse, green waste and mixed recyclables, integrated into the existing twice-weekly pickup. Data and feedback from this initial stage of implementation has been used to define the expansion of the islandwide system. City Ordinance 07-45 requires the submittal of an interim report to the City Council no later than June 30, 2008, with a final evaluation report to be completed within 60 days of the termination of the pilot. This report constitutes the final evaluation and recommends program expansion.

Background

Following a City Charter Amendment vote in November 2006 in favor of adding curbside recycling to the responsibilities of the Department of Environmental Services, ENV developed a proposal for a new collection system. Mayor Mufi Hannemann held a series of community meetings around the island in April and May 2007 to gather resident input on the proposed curbside recycling system. A recap of the meetings is posted online at www.opala.org. Planning for the pilot program began immediately. Recycling bins were delivered to Mililani and Hawaii Kai households beginning mid-September 2007 and the new three-bin collection system began the week of October 29.

Evaluation Timetable

The timetable for evaluating the pilot and planning the program expansion spanned six months. To summarize, the new three-bin collection system began the week of October 29, 2007, with the first recycling pickup starting November 1. The first two months of the pilot were transition months for households to get accustomed to sorting recyclables into the blue and green bins, and to actually see how much non-recyclable waste was left in their gray bin for disposal. Twice-weekly refuse collection was maintained during this period in addition to the weekly recycling pickup.

The transition period concluded after the holidays on January 5. The next week marked the beginning of once-per-week refuse collection and once-per-week recycling.

An evaluation of the data gathered during the two-month transition period (November, December) and four months of full operation (January through April) was used as the basis for this evaluation report. Planning for the islandwide expansion began before the completion of the evaluation report to coincide with the budget review cycle, which begins in March for the City Council.

The data and input from the two pilot communities have been essential in determining the final structure of the proposed program expansion. Early, positive results from the pilot have enabled ENV to begin preparing for the islandwide expansion scheduled for this fall. Work is already underway, including budget requests and coordination for bin purchasing, processing contracts, collection routes, rollout schedules, and educational materials.

Findings and Recommendations

Positive results from the pilot communities in Mililani and Hawaii Kai indicate that the three-bin collection system integrated into the twice-weekly pickup system has worked well for the vast majority of households. The Hawaii Kai pilot, which did not offer the option for paid additional refuse service, performed better than the Mililani pilot where residents had the option. Hawaii Kai recovery rates and setout rates were noticeably higher than Mililani. Of the 5% of Mililani residents that opted to pay for additional second-day refuse service, 62% were not using their recycling bins.

The program was well-received and demonstrated the potential for cost efficiency. The research survey indicates that approximately 90% of the pilot participants like the program and find it easy to do. Additional service needs were minimal. Less than 4% requested additional green/blue recycling bins. Less than 2% requested additional gray bins for high-volume refuse generation. And less than 5% purchased additional refuse pickup service.

Pilot participants did a good job sorting the recyclables, resulting in high quality material with low contamination levels of unacceptable items. The contamination rate for the mixed recyclables was less than 4% and more than 90% of the green waste was unbagged. The collection of the recyclable material was integrated into the existing twice-weekly collection schedule without incurring additional costs, except for the two-month transition period at the start.

The structure of the collection system provided a compelling reason to recycle: to reduce use of the gray refuse bin and need for a second pickup. Recycling was not mandatory for the pilot participants, but the structure of the system encouraged households to sort into the blue and green recycling bins to reduce their household waste, much in line with the City's overall goal to significantly reduce waste to landfill. In the previous pilot program in Mililani, where curbside recycling was provided in addition to twice-weekly refuse collection, 68% indicated that they participated in the curbside recycling program compared to 96% in the current pilot.

ENV recommends expanding the curbside recycling program islandwide using the Hawaii Kai model with no option for additional paid refuse service. Households will use three color-coded bins for refuse (gray), green waste (green) and mixed recyclables (blue); twice-per-week collection with one day for refuse in the gray bin and the other dedicated to recycling, alternating weekly between the blue and green bins. A two-month transition period with continued twice-weekly refuse pickup will provide residents with time to get accustomed to sorting into the blue and green bins. The expansion will begin November 2008 on the following rollout schedule:

November 2008 (39,000 homes)	Kuliouou to Manoa, Kapahulu; Kailua, Lanikai; Mokuleia to Sunset
May 2009 (40,300 homes)	Waipio Gentry to Halawa; Wahiawa, Whitmore, Waipio Estates, Laulani Valley; Kaneohe; Waimanalo
November 2009 (22,400 homes)	Foster Village to Makiki; Kahuku to Kahaluu
May 2010 (36,000 homes)	Makakilo to Waikele; Waipahu; Ewa Beach to West Loch; Honokai Hale to Makua

The imperative to expand the curbside recycling program to the entire island as quickly as possible is clear. However, to ensure success the recommendation is for the program to be strategically implemented in phases to give communities time to adjust to the new system with support from City

staff, to coordinate the rollout with bin manufacturing and delivery capacity, and to distribute the capital costs over several fiscal year budgets.

The full system is expected to operate efficiently with recycling pickup displacing one refuse pickup day. The predominant additional costs will be related to the purchase of approximately 260,000 recycling bins. When these costs are annualized over the 10-year life of the bins, the overall system costs are no greater than the current system. However, annualized costs are not the same as start-up costs. The total cost for 260,000 bins at \$90 per bin is \$23.4 million, which needs to be appropriated within the City's budget to support the expansion timetable. The start-up of this new system is easier financed over a two- to three-year period than all in one budget year. Further, the value of learning and being able to make adjustments as you go should not be underestimated.

Based upon the recovery rates achieved in the pilot program, an islandwide curbside recycling program would capture approximately 27,000 tons of mixed recyclables and 48,000 tons of green waste. These projections may be conservative, not accounting for increases in participation and recovery as the program matures. Accounting for existing recycling activity at community recycling bins and curbside green waste collection, the net increase of green waste and mixed recyclables resulting from the curbside recycling program is estimated at 53,800 tons.

These recovery projections are based upon actual recovery in the six-month pilot project, which achieved a 54% recovery rate. It is reasonable to assume that recovery rates could increase to 70% as the program matures, and capture 35,000 tons of mixed recyclables and 60,000 tons of green waste a year.

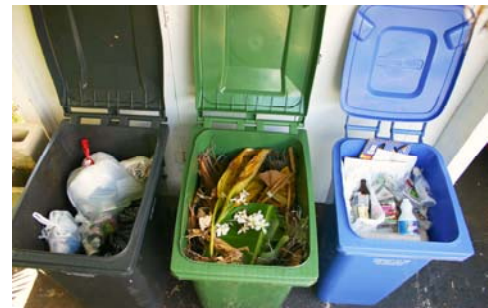
Pilot Program Description

Three Bins, Collection Schedule, Option for Additional Bins, Option for Additional Second-day Refuse

Mililani and Hawaii Kai were selected as the pilot communities. Approximately 11,200 homes were included in the Mililani pilot area and 7,300 in Hawaii Kai. Each home had a complement of three bins for sorting household waste: gray for refuse, green for green waste, and blue for mixed recyclables. Additional green bins were available to households that generated large volumes of green waste. An additional gray bin could be issued to households with large volumes of non-recyclable waste following a monitoring period to confirm need.



Green waste in the green bin included grass, tree and hedge trimmings and Christmas trees. Mixed recyclables in the blue bin included glass bottles and jars, plastic containers #1 and #2, aluminum cans, newspaper and corrugated cardboard.



Neighborhood collection schedules remained the same, with pickups falling on Monday/Thursday, Tuesday/Friday or Wednesday/Saturday. In this new pilot program, the first pickup day was for refuse in the gray bin and the second pickup day was dedicated to recycling, alternating weekly between the blue and green bins.

All of the program elements for the pilot in these two communities were identical except for the second-day refuse option offered to Mililani. Homes in Mililani had the option of purchasing additional second-day refuse pickup service for a fee of \$10 per month. Hawaii Kai households were asked to work within the simpler system of one collection day for refuse and one collection day for



recyclables each week, with no option for additional refuse pickup. The purpose was to allow the City's Department of Environmental Services to clearly determine the need for a second refuse pickup and the effectiveness on recycling rates and participation by comparing results from the two project areas.

Town home communities in Mililani and Hawaii Kai with City curb service were contacted in advance of the rollout to discuss modifications to the system that might accommodate smaller, laterally connected home complexes. They had concerns about space for the recycling bins and, in Mililani, ensuring that the bins were not visible. The properties in Hawaii Kai requested blue and green bins for placement in central areas for common use. The Mililani properties already had blue bins issued to individual homes under the previous recycling program. One property opted for a central set of green bins and the other requested no green bins. Property managers coordinated with City collection to place the central bins at the curb for pickup on the appropriate collection days.

Mililani

- Mililani Pinnacles (90 homes): Each home had a blue bin before the start of program. No green bins were requested because landscaping for the property is done by a private company that removes the green waste.
- Hampton Court (100 homes): Each home had blue bins before the start of program. Ten (10) green bins were requested to be kept in a central location and made available for grounds maintenance staff.

Hawaii Kai

- Koko Isle (124 homes): At the start of program a centralized set of blue bins and green bins (15 blue - 25 green) was located in the club house parking lot for use by all residents. Households could request individual bins for their homes, if they preferred. The requests were coordinated through their resident manager.
- Kuapa Isle (234 homes): At the start of the program a centralized set of blue and green bins (25 blue - 25 green) was placed for common use. Households could request individual bins for their homes, if they preferred.

Pilot Program Implementation

Rollout, Education, Transition Period, Customer Service

Two pilot curbside recycling programs began the week of October 29 in Mililani (approximately 11,200 homes) and Hawaii Kai (approximately 7,300 homes). Recycling bins were delivered to residents in these communities during September and October. The program instructions were attached to the recycling bin and included a set of calendar reminder stickers. The content of the instructional brochure is provided in [Exhibit A](#). Instructions were also embossed onto the recycling bins, including the types of recyclable materials that should go into each bin, the pickup frequency for the bin (every other week), and the phone number (768-3200) and Website (www.opala.org) for questions and additional information. Brochures are eventually discarded, while this basic program information remains permanently on the bin when needed. The City provided additional notices to the town home property managers to distribute to their residents regarding the modifications to the basic program. The content is provided in [Exhibit B](#).



During the first two months, the City continued to collect refuse in the gray bin on the second day to give residents time to get accustomed to sorting into the blue and green bins, and to see how much non-recyclable refuse remained in their gray bin. This transition period proved beneficial in helping households settle into the new collection system.

Mililani residents had the option to purchase the additional second-day refuse service at any Satellite City Hall on Oahu. The service was provided on a quarterly basis at \$30 per quarter. The purchasers were given a sticker to place on the front of their refuse bins. Their address was placed into the GIS (geographic information system) to generate a route map which was given to the collection operator. The operator provided service only to those streets on his route map showing paid service subscribers. The second-day refuse sticker provided confirmation to the collection operator as he approached the address. The sticker and application form are presented in [Exhibits C and D](#).

A follow-up mailer was sent to participating homes at the end of November, one month after the start of the pilot. It provided a reminder of upcoming changes in the collection system, including the elimination of the second refuse pickup at the end of the two-month transition period, no-cost options for obtaining additional bins, December deadlines for purchasing the first quarter additional refuse service (Mililani only) and more details and graphics for identifying and sorting the recyclable materials. The content of this mailer is provided in [Exhibit E](#).

A postcard was mailed to Mililani second-day refuse service purchasers in February to remind them of purchase instructions, quarterly deadlines, and no-cost options for obtaining additional bins. The content of this postcard is provided in [Exhibit F](#).

The opala.org website functioned as a central information point for program participants. In addition to the instructional information that was included in the brochures, the website provided a monthly calendar of the collection schedules and more detail about sorting recyclables and understanding plastic numeric codes.

ENV recycling staff fielded more than 3,500 phone calls and emails, assisting participants with requests for additional bins and questions about their collection days, recyclable materials, and purchasing additional refuse service.

Data Collection Methods

Field Study, Monitoring, Tonnage Reports, Sort Data, Survey, Caller/Email Feedback

Field Study Routes:

ENV recycling specialists, referred to as the “Opala Team,” monitored blue and green bins early in the mornings ahead of the collection truck. Three study routes were selected for continuous observation of bin setout, bin contents and contamination levels. Additional routes were canvassed to check for problems. Operators provided setout numbers for all routes, which were used to compare and correlate with the data from the study routes.

The study routes included one route from Mililani Mauka, one from the Mililani Town area and one from Hawaii Kai. These neighborhoods were tracked on every recycling collection day from the start of the program through the end of March. During April, the field team shifted their focus to the addresses in Mililani that had purchased the additional second-day refuse service to monitor gray bin and recycling bin setout, and gray bin contents.

ENV staff tagged bins with reminder or error notices whenever problems were noted. If the household had placed the wrong recycling bin at the curb or it contained large amounts of unacceptable material, the bin was tagged and moved away from the curb so it would not be collected. Lesser errors were noted to help the household make corrections, and the bin was allowed to be serviced. A copy of the “Opalagies” bin tag is provided in [Exhibit G](#).



Monitoring at Processing Sites:

The Opala Team was at the processing facilities to monitor as the collection trucks unloaded green waste at the composting facility and mixed recyclables at the recycling facility. The team noted visual observations and estimates of material composition and unacceptable items, and monitored the procedures and operations at the contractor facilities.

Tonnage Reports:

The refuse, green waste and mixed recyclable materials collected each day were scaled and tracked by collection route. This tonnage data was compared to pre-pilot tonnage reports. Changes in community recycling bin activity in the pilot areas were tracked as well.

Sort Data:

The mixed recyclables processing contract required the contractor to provide monthly data for the quantities of each commodity type – aluminum HI-5, aluminum non-beverage, glass HI-5, glass non-beverage, plastic #1 HI-5, plastic #1 non-beverage, plastic #2, newspaper, corrugated cardboard – and for the quantity of contamination. In addition, the State Department of Health conducted a sort study in February to establish a “segregated rate” of the number of HI-5 beverage containers per pound of each commodity. This enabled DOH to accept claims for HI-5 reimbursement from the contractor based upon the tonnage for each commodity.

Participant Phone Survey:

The City contracted QMark Research and Polling to conduct a phone survey of randomly selected households in Mililani and Hawaii Kai to obtain feedback about the pilot program operations. The survey was conducted in April after participants had had some experience with the new program. The survey questions are provided in [Exhibit H](#).

Caller/Email Feedback:

ENV recycling specialists kept records on caller and email questions and feedback. Although this type of feedback is more anecdotal than scientific, and cannot be interpreted to reflect the sentiment at large, it helped staff to improve operations as the program progressed and provided valuable information that was applied to recommendations for the islandwide expansion.



Monitoring for Nuisance Complaints:

In the new collection system, refuse is collected once per week and the second weekly pickup is dedicated to recycling. ENV set up a procedure with the State Department of Health Vector Control Branch for monitoring potential complaints of nuisance related to odor and vector issues. Any public complaints were to be forwarded to DOH for investigation and evaluation. The Vector Control Branch would send an inspector to the site to investigate the problem and determine the cause. Copies of the inspection reports would be provided to ENV, and if needed, ENV would take action to correct the situation as quickly as possible. If any public complaints were made directly to DOH, they were also to transmit a report to ENV on their inspection and findings.

Findings and Observations

Setout Rates, Recovery Rates, Participation, Material Quality, Processing Facilities, Bin Requests, Once/Week Refuse

Setout Rates:

Setout rates indicate the number of bins that are placed at the curb for pickup on the scheduled days. Setout is not the same as participation. A household may choose not to setout their blue or green bin on every available collection day.

The monthly setout rates are presented in [Table 1](#). The participant survey responses related to setout behavior are provided in [Exhibit I](#).

Collection routes service approximately 930 homes. The setout rates for the study route in Hawaii Kai averaged 617 for green bins (66%) and 624 (67%) for blue bins. In comparison, the Mililani study routes averaged 355 green bins (38%) and 378 blue bins (41%).

The participant survey showed that 75% of the respondents put their blue bin out on the curb every two weeks for pickup. Of the remainder, 15% put out their blue bin once a month while under 6% put their blue bins out less than once a month.

Two-thirds (67%) of those polled regularly put out their green bins for pickup. Approximately 23% put these bins out at least once a month while 6% put them out less frequently.

Recovery Rates:

Recovery rates indicate the amount of material collected relative to the total quantity available in the residential waste stream. [Table 1](#) shows the monthly recovery of mixed recyclables and green waste from the pilot communities. The average monthly recovery was higher for Hawaii Kai (7,300 homes) compared to Mililani (11,200 homes). Green waste recovery averaged 244 tons per month in Hawaii Kai versus 216 tons in Mililani. Mixed recyclables recovery averaged 131 tons per month in Hawaii Kai versus 123 in Mililani. (Monthly recovery numbers may vary with the number of pickups in a given calendar month. Some months had two pickups and others three.)

[Table 2](#) shows the distribution of tonnage collected on refuse and recycling days under the new pilot program compared with tonnage collected under the previous twice weekly refuse collection system. In both Hawaii Kai and Mililani, during the three months prior to the start of the pilot program, 90% of collection was refuse and 10% green waste. Refuse was collected twice per week and green waste was collected twice per month in either a bin system in Mililani or a bag system in Hawaii Kai. In the new pilot collection system, the proportion of refuse to recyclables in Hawaii Kai shifted to 67% refuse and 33% recyclables (mixed recyclables and green waste), which correlates with anticipated projections based on the residential waste characterization studies. Mililani had a higher amount of refuse due to lower recycling rates, resulting in a 75/25 ratio.



The estimated recovery rate for mixed recyclables in the pilot program is 54%. This recovery rate was derived as follows. Based on recent waste characterization data, there are approximately 49,000 tons of mixed recyclables generated in the islandwide residential waste stream collected by the City. If the recovery rates tracked during the first six months in the pilot communities are used to project islandwide recovery, the City could expect to capture approximately 27,000 tons of mixed recyclables, or 54% of the available 49,000 tons of material.

The estimated recovery rate for green waste in the pilot program is 54%, calculated as follows. The recent waste characterization data indicates that there are approximately 88,000 tons of green waste generated islandwide in the residential waste stream. Based on the six-month pilot recovery data, the City could expect to capture approximately 48,000 tons of green waste in the curbside pickup system, or 54% of the available 88,000 tons of material. Oahu residents currently drop off 18,000 tons of green waste at City convenience centers and composting facilities, and this rate appears to be unaffected by curbside service. Therefore, the total combined projected recovery, curbside plus drop-off, could be 66,000 tons, or 75%.

It should be noted that the pilot program has been in place for only six months. Curbside programs in other communities around the country have shown that recovery rates increase as the programs mature.

In tracking recovery, ENV also monitored changes in activity at the community recycling bins located in the pilot areas to determine the net increase in recycling due to the introduction of curbside pickup. There was an overall 7% reduction in the amount of paper and a 39% reduction in mixed containers compared with the months prior to the start of the curbside pilot, indicating that some households shifted their recycling efforts from the community bin to the curbside bin. Community bin activity in the surrounding communities showed no noticeable change.

There are nine community recycling bins located in the pilot areas: three in Hawaii Kai and six in Mililani. The average overall monthly tonnage prior to the start of curbside pickup was 72 tons of paper and 16 tons of mixed containers. After curbside pickup began, the average monthly tonnage was 67 tons of paper and 10 tons of mixed containers. This represents a difference of five tons per month of paper and six tons per month of mixed recyclables, presumably shifting to the curbside blue bin. This may contribute to the slightly higher overall tonnage collected at the curb.

Curbside green waste recovery rates for the months prior to the start of the pilot were compared to recovery rates in the new system. In Mililani there was an average monthly increase of 103 tons. In Hawaii Kai the average monthly recovery rate increased by 138 tons under the new pickup system.

Curbside collection of green waste had been provided in both Mililani and Hawaii Kai for years prior to the start of the pilot program. Mililani had been using a bin system since 2006; Hawaii Kai set out green waste in bags. Both communities had twice-per-month pickup. Although Hawaii Kai showed a greater increase in green waste recovery than Mililani in the new pilot system, it should be noted that green waste recovery in Mililani/Wahiawa had previously increased by 50 tons per month in 2006, when these communities shifted from the bag pickup system to a bin pickup system. The change in collection schedule under the pilot seems to have prompted a further increase in green waste.

Table 1: Recovery and Setout Rates

Recovery in tons Setout per average 930 home route	Hawaii Kai (7,300 homes)		Mililani (11,200 homes)		Total Recovery
	Recovery All routes (tons)	Setout rate Per route (bins)	Recovery All routes (tons)	Setout rate Per route (bins)	(tons)
November					
Recovery					
Green Waste	192.43		188.50		380.93
Mixed Recyclables	128.36		142.78		271.14
Average Bin Setout					
Green Bin		490		313	
Blue Bin		578		298	
December					
Recovery					
Green Waste	338.07		209.11		547.18
Mixed Recyclables	121.93		136.29		258.22
Average Bin Setout					
Green Bin		610		298	
Blue Bin		613		325	
January					
Recovery					
Green Waste	250.73		233.12		486.85
Mixed Recyclables	128.57		120.96		249.53
Average Bin Setout					
Green Bin		658		390	
Blue Bin		631		414	
February					
Recovery					
Green Waste	231.35		221.33		452.68
Mixed Recyclables	114.34		115.18		229.52
Average Bin Setout					
Green Bin		607		356	
Blue Bin		538		400	
March					
Recovery					
Green Waste	228.03		249.24		477.27
Mixed Recyclables	180.34		108.25		288.59
Average Bin Setout					
Green Bin		637		401	
Blue Bin		682		406	
April					
Recovery					
Green Waste	223.61		192.74		416.35
Mixed Recyclables	114.32		112.53		226.85
Average Bin Setout					
Green Bin		699		372	
Blue Bin		701		424	
6-month averages					
Avg. green bin setout		617 (66%)		355 (38%)	
Avg. blue bin setout		624 (67%)		378 (41%)	
Avg. monthly green waste recovery	244.04		216.00		460
Avg. monthly mixed recyclables recovery	131.31		122.66		254

Table 2: Refuse-Recycling Collection Distribution

(in tons)		Refuse	Green Waste	Green Waste	Mixed Recyclables	Total
HAWAII KAI			2x/mo bag collection	Every other week green bin	Every other week blue bin	
Pre-pilot	August 2007	1061.26	110.75			1172.01
	September	999.75	106.36			1106.11
	October	930.22	101.96			1032.18
	Total Pre-pilot	2991.23	319.07			3310.30
	Distribution%	90.36%	9.64%			100%
		32 lbs/bin				
Pilot Program	November	801.81		192.44	128.36	1122.61
	December	939.77		338.07	121.93	1399.77
	January 2008	842.56		250.73	128.57	1221.86
	February	627.81		231.35	114.34	973.5
	March	593.99		228.03	180.34	1002.36
	April	729.83		223.61	114.32	1067.76
	Total Pilot	4535.77		1464.23	787.86	6787.96
	Distribution%	66.82%		21.57%	11.61%	100%
		48 lbs/bin		47 lbs/bin	25 lbs/bin	
MILILANI			2x/mo bin collection	Every other week green bin	Every other week blue bin	
Pre-pilot	August 2007	1213.81	112.53			1326.34
	September	1095.9	122.92			1218.82
	October	1132.55	105.90			1238.45
	Total Pre-pilot	3442.26	341.35			3783.61
	Distribution%	90.98%	9.02%			100%
		24 lbs/bin				
Pilot Program	November	1010.86		188.50	161.90	1361.26
	December	1115.61		209.11	136.29	1461.01
	January 2008	1198.12		236.12	120.96	1555.20
	February	937.73		221.33	115.18	1274.24
	March	991.07		249.24	108.25	1348.56
	April	776.13		192.74	112.53	1081.4
	Total Pilot	6029.52		1297.04	755.11	8081.67
	Distribution%	74.61%		16.05%	9.34%	100%
		42 lbs/bin		47 lbs/bin	25 lbs/bin	

Participation:

Participation rates are a nebulous factor, loosely determined as a function of setout, recovery and what people tell you about their behavior in the survey. Responses to the survey questions are compared with the observed setout and recovery data to determine a correlation.

The research survey showed that 96% of the respondents overall used their blue bins for recycling, with 75% setting them out every two weeks. Similarly, 96% used their green bins for green waste, with 67% setting them out every two weeks, 23% monthly and 6% less often. Hawaii Kai respondents reported higher setout frequencies than Mililani for both the blue and green bins, as was observed during the monitoring.

Most of the respondents indicated that they participate in other forms of recycling in addition to the blue bin curbside program. Only 17% said they did not. Approximately 66% take beverage containers to redemption centers and 35% take recyclables to the school/community recycling bins.

Of the 3% who indicated that they do not use the blue bin, 59% prefer to use the redemption centers for HI-5 beverage containers and 26% prefer to use the community recycling bins. Twenty-two percent (22%) said it was too much trouble to store recyclables and 15% said they do not have any recyclables.

Of the 3% who indicated that they do not use the green bin, 52% reported that they didn't have enough green waste, 22% do backyard composting/mulching, 19% have a yard service company take it away, 8% haul it themselves to a City convenience center or to the composting facility and 7% do not recycle their green waste at all.

Recycling was not mandatory for the pilot participants, but the structure of the system encouraged households to sort into the blue and green recycling bins in order to reduce their use of the gray refuse bin and need for second refuse pickup. In the previous pilot program in Mililani where curbside recycling was provided in addition to twice-weekly refuse collection, 68% indicated that they recycled, compared to 96% in the current pilot.

Material Quality:

The quality of the mixed recyclables and green waste was impressive from the inception of the program. Single stream mixed recyclables programs are employed by many communities because this type of collection system provides high recovery rates, but the downside can be higher levels of contamination, or unacceptable materials. The contamination rate for the mixed recyclable materials remained below 4% every month, with some months as low as 2-3%. The contamination rate for the green waste was even lower, with no measurable amounts of unacceptable materials. Approximately 90% of all the green waste was collected unbagged, significantly reducing the labor associated with debagging at the composting facility.

Most of the unacceptable items collected in the mixed recyclables stream were unacceptable types of paper and plastic. The majority of survey respondents identified the acceptable recyclable materials, but some indicated that they also put items such as magazines, cereal boxes, telephone books and plastic tubs into the blue bins.



Processing Facilities and Contracts:

Green waste collected in the pilot program was delivered to the Hawaii Earth Products composting facility in Campbell Industrial Park under an islandwide green waste processing contract. The City paid \$50 per ton for curbside collected green waste. At the start of the program, HEP installed a new trommel and sort line system to improve the processing of curbside collected material. The trommel was retrofitted with cutting blades to rip open any bags. Small particles were screened out, reducing the volume of material that requires grinding by 50%. The remaining green waste and ripped bags continued onto a sort line, where pickers removed the bags and any other contaminants before it headed to the tub grinder.

Mixed recyclables were delivered to RRR Recyclers Services facility in Campbell Industrial Park under a contract specifically bid for the pilot program. The term of the contract was for one year with an option to extend for an additional year. The bid price was \$19.75 per ton for sorting and processing of the mixed recyclables, and the City was credited back five cents per HI-5 beverage container. At the start of the program in November, RRR installed a ground level sort line. The mixed recyclables were unloaded on a concrete slab and pushed onto the conveyor line where pickers sorted the materials into separate commodity bins. In January, RRR installed an elevated sort line purchased from a mainland facility.

RRR provided monthly sort data by material type. A breakdown is provided in [Table 3](#). In February, the State Department of Health conducted a sort study of the HI-5 beverage containers and established a segregated rate that allows RRR to claim the deposit and handling fees from the state HI-5 fund. Once the segregated rate was established, DOH allowed RRR to apply it retroactively to the prior months and to begin claiming funds. According to the contract with the City, RRR credits the five cent deposit to the City and retains the two cent per container handling fees.

The segregated rates set by DOH are as follows:

Aluminum	29.23 beverage containers per pound
Bimetal	0.29 beverage containers per pound
Glass	0.54 beverage containers per pound
Plastic	4.83 beverage containers per pound



The per ton processing charge of \$19.75 plus the HI-5 credit would have netted the City monthly revenue. However, the composition of material collected varied outside the range of estimates specified in the contract.

The mixed recyclables processing contract provided proportional estimates regarding the anticipated composition of the curbside collected material. Based on data from the waste characterization study, it provided an estimated breakdown of each type of material as follows:

Corrugated cardboard	24%
Newspaper	51%
Plastic PET/HI-5	2%
Plastic PET/other	2%
Plastic HDPE	6%
Aluminum HI-5	2%
Aluminum other	3%
Glass HI-5	3%
Glass other	8%

The contract made no guarantee of total volume to be delivered from the program, but recognizing that the commodity values are a key factor in estimating a unit bid price, the contract included a provision that allowed the contractor to request a price adjustment should the relative percentage of any one type of recyclable material vary higher or lower by more than 15%, and provided that this variation continued for three consecutive months.

The estimates for the percentage of corrugated cardboard, newspaper and glass correlated with the actual collection. Aluminum and plastic, however, were collected at a lower percentage. Since these commodities represented the higher value materials in the mix, the contractor made a request to adjust the processing charges to compensate for the revenue loss. ENV evaluated the costs associated with processing the materials, recognizing potential higher costs for a short-term, small quantity pilot contract, and assessed the commodity values of the recovered materials, determining that an adjustment in the processing charge was justified. Further, it was determined that extending the contract into the second year as provided for in the contract, would enable the contractor to amortize capital costs related to the purchase of the sort line and other equipment and to offer the City a better price.



An increase in the processing charge to \$45 per ton, along with the contract extension, is currently being reviewed and finalized. Based on the adjusted unit price per ton and the credit for deposit beverage containers, the City's net cost would be approximately \$15 per ton.

Table 3: Mixed Recyclables Sort Data

Material Breakdown	Weight (lbs.)	Percent	Material Breakdown	Weight (lbs.)	Percent
November			February		
Cardboard	96,855	16.73%	Cardboard	126,144	27.60%
Newspaper	381,207	65.85%	Newspaper	237,510	51.97%
Plastic (HI-5)	4,575	0.79%	Plastic (HI-5)	4,402	0.96%
Plastic HDPE	6,676	1.15%	Plastic HDPE	8,840	1.93%
Plastic PET	5,087	0.88%	Plastic PET	2,478	0.54%
Aluminum (HI-5)	2,665	0.46%	Aluminum (HI-5)	2,753	0.60%
Aluminum	200	0.03%	Aluminum	207	0.05%
Glass (HI-5)	9,724	1.68%	Glass (HI-5)	14,438	3.16%
Glass (other)	49,674	8.58%	Glass (other)	45,722	10.00%
Bi-Metal	1,970	0.34%	Bi-Metal	1,746	0.38%
Contamination	20,257	3.50%	Contamination	12,780	2.80%
Total	578,890	100.00%	Total	457,020	100.00%
December			March		
Cardboard	110,577	23.01%	Cardboard	143,850	24.55%
Newspaper	279,959	58.25%	Newspaper	337,080	57.53%
Plastic (HI-5)	3,244	0.67%	Plastic (HI-5)	6,311	1.08%
Plastic HDPE	6,268	1.30%	Plastic HDPE	12,620	2.15%
Plastic PET	2,075	0.43%	Plastic PET	3,609	0.62%
Aluminum (HI-5)	2,418	0.50%	Aluminum (HI-5)	1,367	0.23%
Aluminum	137	0.03%	Aluminum	103	0.02%
Glass (HI-5)	10,657	2.22%	Glass (HI-5)	14,213	2.43%
Glass (other)	46,658	9.71%	Glass (other)	45,007	7.68%
Bi-Metal	4,097	0.85%	Bi-Metal	1,980	0.34%
Contamination	14,520	3.02%	Contamination	19,740	3.37%
Total	480,610	100.00%	Total	585,880	100.00%
January			April		
Cardboard	167,710	33.61%	Cardboard	116,430	25.66%
Newspaper	232,060	46.51%	Newspaper	240,330	52.97%
Plastic (HI-5)	4,172	0.84%	Plastic (HI-5)	4,917	1.08%
Plastic HDPE	6,100	1.22%	Plastic HDPE	10,380	2.29%
Plastic PET	4,628	0.93%	Plastic PET	2,263	0.50%
Aluminum (HI-5)	3,486	0.70%	Aluminum (HI-5)	2,725	0.60%
Aluminum	262	0.05%	Aluminum	205	0.05%
Glass (HI-5)	15,565	3.12%	Glass (HI-5)	14,388	3.17%
Glass (other)	49,290	9.88%	Glass (other)	45,562	10.04%
Bi-Metal	2,195	0.44%	Bi-Metal	1,570	0.35%
Contamination	13,520	2.71%	Contamination	14,940	3.29%
Total	498,988	100.00%	Total	453,710	100.00%

Table 4 provides data about additional bins and refuse service requested by households.

Table 4: Additional Bins and Refuse Service

	Hawaii Kai (7,300 homes)	Mililani (11,200 homes)	Total (18,500 homes)
Requests for additional bins			
Green Bins (2 nd bin)	357	190 *	547
Green Bins (3 rd bin)	68	3	71
Blue Bins	32	17	49
Gray Bins **	115	159	274
Approved/issued	25	24	49
Request denied	59	64	123
Cancelled request (by customer)	6	34	40
no need	2	17	19
too much trouble	2		2
paid for 2 nd -day service		7	7
no reason	2	10	12
Monitoring ongoing	25	37	62
Purchase additional 2nd-day refuse service			
First Quarter		425	
Second Quarter		490	
Third Quarter		143	
Fourth Quarter		103	
<p>* includes 110 additional green bins issued prior to the start of the pilot. Mililani was already in a bin system for green waste, while Hawaii Kai transitioned from bags to bins in the pilot.</p> <p>** additional gray bins for non-recyclable refuse were issued following a monitoring period to confirm need. Numerous households withdrew their request once the procedure was fully explained. Others did not qualify based on volume need.</p>			

Requests for Additional Green and Blue Recycling Bins:

Approximately 547 households in Mililani and Hawaii Kai (total 18,500) requested additional green bins to accommodate large volumes of green waste. Approximately 70 of those households requested two additional green bins. This count includes extra green bins that were distributed in Mililani under the previous program. A small number of households (49) requested an additional blue bin, indicating that the single bin was not sufficient to accommodate their mixed recyclables. Additional green and blue bins were issued based on phone inquiries with recycling specialist staff.

Requests for Additional Gray Bins:

Out of the total 18,500 participating homes in both Mililani and Hawaii Kai, approximately 274 requested an additional gray bin to accommodate high volumes of non-recyclable refuse. Additional gray refuse bins were issued following a monitoring period to confirm need. Households were asked

to place excess refuse in bags alongside their refuse bin on pickup days. Supervisors checked refuse bins over a period of weeks for capacity and for any recyclable materials that could be sorted into the blue or green bins. Numerous households withdrew their request once the procedure was fully explained. Others did not qualify based on volume need. Thus far, 49 additional refuse bins have been issued, 123 requests were denied, 40 households cancelled their request, and 62 are still being monitored.

Requests for Additional Refuse Service (Mililani, as of end of April 2008):

Of the 11,200 households in Mililani, approximately 425 opted to pay for additional refuse pickup service in the first quarter and 490 for the second quarter beginning in April. It is interesting to note that about 80 households that purchased for the first quarter did not continue the service in the second quarter, and that approximately 125 households opted to purchase through the third quarter. Most seem to be purchasing one quarter at a time, either to gauge their need or the City's commitment to continue the service as the pilot progresses.

ENV staff monitored the setout of gray bins for the paid second-day service throughout the month of April and observed that 12% were full bins, 13% were three-quarters full, 39% were half full, 27% were a quarter full, and 9% had no setout. Staff also noted that 62% did not have a blue/green bin setout, indicating that the households were not participating in curbside recycling.

The research survey asked Mililani respondents if they purchased the additional second-day refuse service for \$10/month. Five percent (5%) indicated yes, which correlates closely enough with the actual data. These respondents were then asked why. Sixty-five percent (65%) cited too much garbage generated by their household, 35% did not like garbage to sit around for a full week, 20% thought it was unhealthy or unsafe, 10% to avoid odor and 5% just in case it was needed (they found it difficult to gauge or anticipate quantities of household garbage).

Delivering the service to the limited quantity of homes spread over a large geographic area was challenging and incurred higher per household costs than the regular collection routes. Operators were not readily willing to accept overtime to service the special second-day paid routes. The operators found that the special routes for approximately 165 homes required more time to service than their regular routes of 950 homes, and the initial offer of six hours of overtime was insufficient. Straight time operators were utilized when available. Supervisors were assigned when no operators were available. The employee labor union finally agreed to seven hours of overtime for each special route to provide service to approximately 165 homes. If this additional service were to be included in the islandwide expansion, it would not rely on overtime staff, but work time required would remain high related to the number of homes serviced.

The costs to provide the additional second-day refuse service were not covered by the \$10 per month fee. Actual costs from the pilot including overtime labor, fuel, truck maintenance and administration, totaled almost \$40,000 for the four-month pilot period from January through April, or approximately \$20 per household per month. If this additional service were to be made permanent, ENV would need to establish a separate permanent route with additional equipment. To service the same number of homes in Mililani for the same four-month period, the estimated cost would be \$57,000, or approximately \$28.50 per household per month.

Once-per-week Refuse:

Community response, nuisance complaints, impact on odor and vectors, impact on tonnage

Following the transition period, households seemed to adjust to the new system of once-per-week refuse collection and once-per-week recycling pickup. The transition period proved beneficial in giving households time to become accustomed to sorting and to actually experience how much recycling reduced the volume of refuse in their gray bin. Replacing one refuse pickup day with the recycling day encouraged more households to make use of the blue and green recycling bins in order to reduce the volume in the gray bins. The two-month period also provided them time to determine if they needed additional bins and to make their requests to the City.

Caller and email feedback indicated that numerous households initially had concerns about reducing refuse pickup to once-per-week, but once they participated with recycling they realized that it was workable. ENV staff received approximately 150 calls and emails from September 2007 through April 2008 that were characterized as complaints from residents who were unhappy with once-per-week refuse collection, with storing additional recycling bins, or with having to recycle in general.

An estimated 30 residents called or emailed to complain about odors or vectors related to their refuse bin, but none were willing to allow us to submit a report and investigate the source of the problem with them further. ENV staff advised them on proper bagging for refuse and other measures to ensure sanitation in the refuse bin and around the home, including keeping the lid closed on all refuse containers and double bagging putrescible waste. There were no reports submitted to the Department of Health Vector Control Branch either through the City or independently.

The research survey asked respondents if the once-per-week refuse collection had caused any problems with odor or vectors at their home. Overall, 67% indicated no problems, 8% said sometimes and 25% said yes. Odor was the dominant issue for them. Of the 33% who indicated that odors/vectors were an issue, even sometimes, two-thirds indicated that it was manageable.

It may be important to note that the research sample might be skewed towards those with large volumes of refuse. When asked in a previous question whether they had requested an additional gray bin, 11% responded yes. That percentage does not correlate with the actual number of requests received. At 11% of the total number of households, there would be 2,035 requests for additional gray bins, and ENV received 274.

In order to further investigate the impact of once-per-week collection beyond the short-term pilot, ENV contacted several warm weather communities that have been providing once-per-week refuse collection for longer time periods. ENV wanted to further explore potential issues and, if they had experienced any problems, to learn how these had been addressed. Below is a brief summary:

- Kauai County has manual once-per-week refuse collection. The county does not offer curbside recycling at this time, but is investigating automation of refuse and curbside recycling within the next four years. They have not had odor or vector control issues since the inception of the curbside refuse collection. Contact person: Allison Fraley, Kauai County, Recycling Coordinator.

- Maui County (Lanai) has provided once-per-week automated refuse collection since 1990. The county does not offer curbside recycling at this time. They have not experienced problems related to odors and vectors. Contact person: Tracy Takamine, Maui County, Department of Public Works & Environmental Management, Solid Waste Division Chief.
- The City of Jacksonville, Florida, has had curbside recycling and once-per-week refuse collection since July 2007. Initially, they reported some minor problems as residents changed to the new system. They advised residents to bag their trash and rinse refuse containers weekly if they experienced problems. They have not had vector control issues. Contact person: Kerry Terrell, Jacksonville, FL, Sanitation Division, Superintendent.
- The City of Austin, Texas, has provided once-per-week refuse collection since 1991, when they started their curbside recycling program. They report no problems related to odor and vectors. They advise residents to bag their refuse before placing it in the automated bins. Contact person: Deborah Salzman, Austin, TX, Waste Management Supervisor.
- The City of San Diego, California, has always provided only once-per-week refuse pickup. They switched to automated refuse pickup in 1992-1994. They added curbside recycling when they changed to automation. Since the change, they have not had any problems with odors or vector control issues. They ask residents to bag their refuse before it goes into the cart. Contact person: Ben Torres, San Diego, CA, District Officer.

ENV assessed the impact on tonnage in a once-per-week system, comparing the quantities of refuse collected pre-pilot (twice weekly) with the pilot system (once per week). Particular focus was on the amount of refuse per bin. See [Table 2](#) Refuse-Recycling Collection Distribution.

Refuse collection in the pre-pilot, twice-weekly system in Hawaii Kai averaged 32 pounds per bin per pickup. In once-per-week collection with recycling, the amount of refuse increased to 48 pounds per bin per pickup. In Mililani, pre-pilot refuse averaged 24 pounds per bin compared to 42 pounds per bin when the system switched to once per week.

Town Home Program Modifications:

In coordination with the property managers and condominium boards, the program was set up differently for the four town home communities in the pilot area. Mililani town homes already had blue bins at each unit, and decided not to take individual green bins. Hawaii Kai town homes tried centralizing a set of blue and green bins for common use, but allowed individual homes to request their own, if preferred.

Although limited space and yards had prompted the program modifications, many households seemed to prefer having their own blue bin for mixed recyclables. The green bins were utilized in limited quantities.

In Mililani, the Mililani Pinnacles and Hampton Court already had blue bins at each home (delivered in 2004). Hampton Court requested a set of green bins to use in a central area. Mililani Pinnacles uses a private landscape company and did not need green bins. These two town home communities requested no further changes.

In Hawaii Kai, many residents requested delivery of bins for their individual town homes in addition to the set of centralized bins setup at the start of the program.

Koko Isle is no longer centralizing recycling bins for common use. Participating households are storing their own bins. The initial set of centralized recycling bins (15 blue and 25 green) have been distributed to individual town homes, and residents have requested an additional 35 blue bins and 10 green bins since the start of the program. As of May, the resident manager asked residents to make requests directly to the City and additional bins continue to be distributed.

Kuapa Isle property management continues to coordinate the central set of recycling bins for common use, and further accommodates residents with manual curbside pickup of bags of recyclables and green waste. Kuapa Isles management was already engaged in operating a recycling program for residents prior to the start of the City's new pilot. Additional recycling bins were requested for both the central area and for use by individual units. Currently, Kuapa Isles has 110 blue bins and 35 green bins. Approximately 90 of the blue bins are being stored for use at the individual homes, with 20 in the common area. Green bins continue to be used mostly in the centralized area – 10 are located at individual homes; 25 in the central area.

Participant Education:

The City provided an instructional brochure along with calendar reminder stickers attached to the recycling bins, a direct mail brochure one month after the start of the program, and information posted online at the opala.org Website. The research survey asked respondents if they recalled these educational materials and how useful they were.

Eighty percent (80%) recalled the blue brochure attached to the bin, 62% remember seeing the direct mail brochure, and 72% remember reading newspaper articles. Overall, 87% found the educational materials very or somewhat effective and useful. Thirty-three percent (33%) were using the calendar reminder stickers.

Those who dealt with the City by phone were pleased. Eighteen percent (18%) of those polled indicated that they had called the City's Recycling Office for assistance, and 92% found them helpful (75% very helpful).

Overall, a third (33%) of those polled visited the opala.org Website, and 95% found it useful. Most were checking for bin pickup schedules and general recycling information.

Participant Feedback:

The City received feedback from pilot program participants via phone calls, emails and the research survey conducted by QMark Research & Polling. The survey questions and response data are provided in [Exhibits H, I and J](#).

ENV staff logged more than 3,500 calls and 400 emails from September 2007 (the start of the recycling bin delivery) through April 2008. The vast majority of calls and emails were requests for assistance and information – requests for additional bins, questions about what types of materials are recyclable, inquiries about the new collection schedule, and how to handle high volumes of green waste. Less than 150 were categorized as complaint calls from individuals who were unhappy or dissatisfied with the changes in the collection service and were not to be persuaded through staff assistance and additional information. Their complaints included not wanting to store three bins on their property, not wanting to be forced to recycle, and wanting twice-per-week refuse pickup to continue.

The research survey probed community perceptions with a number of questions:

First, they were asked which of the following statements best described their personal feelings about the program. A large majority of 89% liked the program (10% would prefer twice-weekly refuse continued as well).

	OVERALL	Mililani	Hawaii Kai
I like participating in the curbside recycling program and do not think I need the extra refuse pickup each week	79%	76%	82%
I like participating in the curbside recycling program but think I need the extra pickup each week at the \$10 per month charge	10%	13%	8%
I dislike participating in curbside recycling and prefer to put all my refuse in one bin	7%	6%	7%
Don't know	4%	5%	4%

Next, they were asked how long it took them to adapt to the new curbside recycling program. Almost all (94%) were able to adjust within the two-month transition period.

	OVERALL	Mililani	Hawaii Kai
Less than a month	70%	67%	73%
About a month	17%	18%	16%
About 2 months	6%	6%	5%
More than 2 months	2%	3%	1%
Still not sure how it works	4%	4%	4%

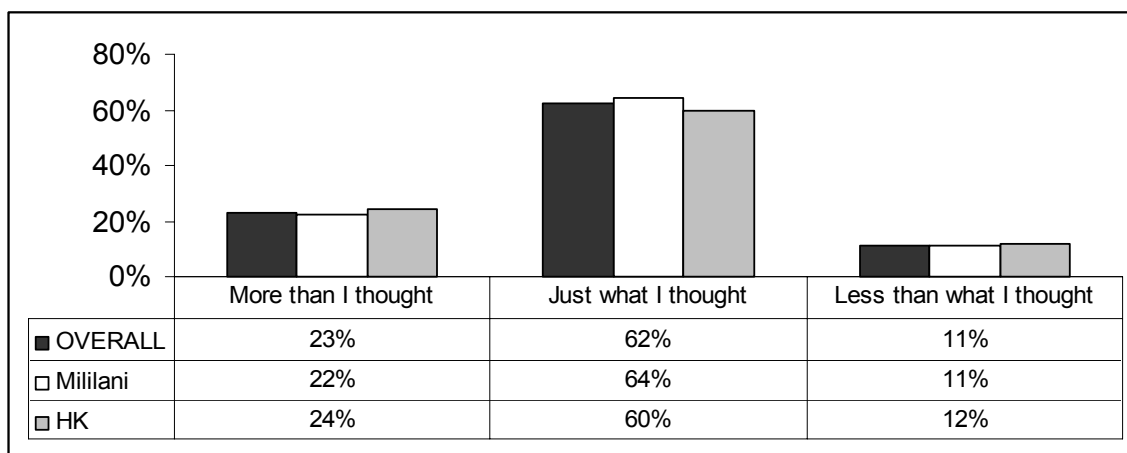
Respondents were asked to rate how easy or difficult it was to sort recyclables in the program. Over 90% indicated it was very or somewhat easy.

	OVERALL	Mililani	Hawaii Kai
Very easy	61%	58%	63%
Somewhat easy	30%	32%	27%
Somewhat difficult or troublesome	7%	6%	8%
Very difficult or troublesome	1%	2%	1%
Don't know	1%	2%	1%
MEAN	3.5	3.5	3.5

Respondents were then asked what they found confusing or frustrating. More than 50% said nothing was confusing or frustrating. Twenty-three percent (23%) said that a problem for them was remembering which bin to take out on alternating weeks.

	OVERALL	Mililani	Hawaii Kai
Nothing	51%	50%	51%
Confused/frustrated by pickup schedule	23%	25%	20%
Can't recycle certain materials	10%	10%	10%
Once a week refuse pickup	9%	8%	9%
Hassle to separate garbage	7%	6%	8%
\$10 fee for 2 nd trash pickup	6%	7%	5%

Respondents were asked about the amount of recyclables they are discovering as a result of this program. Overall, 23% said that the quantity of recyclable materials generated by their household is more than what they thought.



At the conclusion of the research respondents were given an opportunity to voice any concerns or comments they may have had regarding the pilot recycling program in their neighborhood. A sampling of some of the responses received is listed below. Overall, the positive comments dominated. For a full list, see the verbatim section of the participant survey presented in [Exhibit J](#).

“Easier than I thought it would be”

“It’s good what the city is doing”

“During holidays, I would recommend twice-a-week pickup”

“I’d like to recycle more different kinds of materials”

“I’d like to have garbage collection twice a week without the \$10 charge. Instructions for separating refuse are difficult when it comes to separating paper from glossy paper. What about bottle caps?”

“I am very upset that we lost our second-day garbage pickup. We have a large family with a lot of rubbish that is not recyclable, so it stinks around here and people are illegally dumping garbage at school. Re-evaluate.”

“Confused on exactly what goes in the bin”

“Confused with what bin are collected on what days, why not use even or odd days of collection. More than once a week pickup for gray bin”

“Find more creative ways to explain what can be recycled, concern about placing glass in the bin without breakage and/or worrying about shards”

“Good idea needs to continue. Don’t give in and need to refine it”

“Gray bins need to be picked up more often without cost!”

“Green bin fills up too quick”

“He likes the program but thinks it could go farther -- not just curbside, but have more bins everywhere like at parks”

“I’m glad we have it, before I was recycling on my own-taking it to the center-this is easier”

“I am disappointed with not recycling cereal boxes or paper products. The City is only interested in money making recyclable”

“I have enough room for my bins but my neighbors complain about there is not enough room for the bins”

“...some of the people in my area ... they are not separating it correctly-- come up with a better system for those who don’t understand”

"I need to have the garbage(gray)picked up 2x week because I have dog waste and people have baby disposable diapers that smell and I suggest the pickup schedule be first week-blue, second week/third week-garbage, fourth week-green. Easy and good"

"I still wish for two pickups for garbage"

"I think it is silly/bottle bill charges 5cents/then the city just gets it/we need two times weekly pickup"

"I think it's about time to see this and I would like to see this islandwide"

"I think this program is working very well and reducing the amount of things that people put in a gray bin"

"I was pleasantly surprised how much it reduced my garbage"

Recommendation for Program Expansion

Preferred System Design, Rollout Schedule

Recommended System Design:

ENV recommends expanding the curbside recycling program islandwide using the Hawaii Kai model – three color coded bins for refuse (gray), green waste (green) and mixed recyclables (blue); twice-per-week collection with one day for refuse in the gray bin and the other dedicated to recycling, alternating weekly between the blue and green bins; no option for additional paid refuse collection service.

Early positive results from the pilot communities in Mililani and Hawaii Kai indicate that the three-bin collection system integrated into the twice-weekly pickup system has worked well for the vast majority of households. The Hawaii Kai pilot, which did not offer the option for paid additional refuse collection service, performed better than the Mililani pilot where residents had the option. Hawaii Kai recovery rates and setout rates were noticeably higher than Mililani, and less than 5% of Mililani residents opted to pay for additional service. Of those households that paid for additional refuse service, 62% were not using their recycling bins.

The second-day paid service offered to Mililani in the pilot will be phased out. ENV will contact all of the affected households to assist them with other available no-cost options, such as an additional gray bin, if volume had been the issue, or getting started with recycling, if they had been resistant.

Recommended Rollout Schedule:

ENV recommends a rollout schedule to incorporate approximately 40,000 additional homes into the new program every six months beginning in November 2008.

November 2008 (39,000 homes) Kuliouou to Manoa, Kapahulu; Kailua, Lanikai; Mokuleia to Sunset

May 2009 (40,300 homes) Waipio Gentry to Halawa; Wahiawa, Whitmore, Waipio Estates, Laulani Valley; Kaneohe; Waimanalo

November 2009 (22,400 homes) Foster Village to Makiki; Kahuku to Kahaluu

May 2010 (36,000 homes) Makakilo to Waikele; Waipahu; Ewa Beach to West Loch; Honokai Hale to Makua

For the November 2008 start,

- recycling bins will be delivered to households in September/October (instructional brochures attached)
- first recycling collection will begin in November
- a two-month transition period with continued twice weekly refuse collection will give households time to get accustomed to sorting into the blue and green bins
- full implementation of once-per-week refuse and once-per-week recycling collection will begin just past the New Year holiday.

The imperative to expand the curbside recycling program to the entire island as quickly as possible is clear. However, to ensure success the recommendation is for the program to be strategically implemented in phases for the following reasons:

- Communities need time to adjust to the changes, and they need support from City staff through the transition. For each phase of the expansion, City staff is required to be in the field and on the phones assisting residents. To provide good customer service to more than 40,000 at a time would compromise the program.
- For each phase, two months are required to deliver the recycling bins and three months are needed to educate and transition residents into the full system. One month later, bin delivery begins for the next phase.
- Looking forward, the City will need to purchase some 260,000 recycling bins. The start-up of this new system is more easily financed over a 2-3 year period than all in one budget year. Funding for recycling bins is appropriated in the operating budget. As such, the initial cost of the bins is being distributed over several fiscal years. FY07 \$1.2M; FY08 \$7.5M; FY09, approximately \$6.03M was requested; FY10, approximately \$8.6M will need to be requested. Total: \$23.4M
- The full system is expected to operate efficiently with recycling pickup displacing one refuse pickup day. The predominant additional costs will be related to the purchase of the 260,000 recycling bins. When these costs are annualized over the 10-year life of the bins, the overall system costs remain efficient. However, annualized costs are not the same as start-up costs.
- Processing contracts, union negotiations, route adjustments, training of new personnel are additional factors.
- Further, the value of learning and being able to make adjustments as you go should not be underestimated.

Projected Recovery of Green Waste and Mixed Recyclables:

Based upon the recovery rates in the pilot program, an islandwide curbside recycling program would capture approximately 27,000 tons of mixed recyclables and 48,000 tons of green waste. These projections may be conservative, not accounting for increases in participation and recovery as the program matures.

Currently, the City collects approximately 20,000 tons of green waste in the existing curbside pickup system. The net increase resulting from the new curbside recycling system is estimated at 28,000 tons.

Based on the analysis of the impact of the curbside system on recycling activity at the community bins, approximately 1,200 tons of material is expected to shift from the community bin to the curbside bin. Therefore, the net increase from the new curbside system is estimated at 25,800 tons.

The combined net increase of green waste and mixed recyclables recovery resulting from the curbside recycling program is estimated at 53,800 tons.

[Table 5](#) shows recovery projections correlated with the expansion phases.

Table 5: Projected Islandwide Recovery

Phase	Start Date	Communities	Number of Homes	Projected Recovery Green Waste	Projected Recovery Mixed Recyclables	Expansion Completion
1	Nov 2007	Hawaii Kai; Mililani	18,500	5,520	3,050	12%
2	Nov 2008	Kuliouou to Manoa, Kapahulu; Kailua, Lanikai; Mokuleia to Sunset	39,000	1,1640	6,430	37%
3	May 2009	Waipio Gentry to Halawa; Wahiawa, Whitmore, Waipio Estates, Laulani Valley; Kaneohe; Waimanalo	40,300	12,030	6,640	63%
4	Nov 2009	Foster Village to Makiki; Kahuku to Kahaluu	22,400	6,690	3,690	77%
5	May 2010	Makakilo to Waikele, Waipahu; Ewa Beach to West Loch; Honokai Hale to Makua	36,000	10,750	5,930	100%
TOTAL			156,200	46,630	25,740	
TOTAL (including growth)			@160,000	47,762	26,360	
				say 48,000	say 27,000	

As previously noted, these recovery projections are based upon actual recovery in the six-month pilot project, which achieved a 54% recovery rate. It is reasonable to assume that recovery rates could increase to 70% as the program matures, and capture 35,000 tons of mixed recyclables and 60,000 tons of green waste. Actual recovery for each community may vary due to socioeconomic and other regional factors.

Recommended Strategy for Processing Contracts:

ENV recommends extending the current contracts with Hawaiian Earth Products and RRR Recycling Services for the near term, while new contracts are structured and bid to support the long-term need.

The City expects to issue a request for proposals by July 2008 to process green waste, food waste and sewage sludge utilizing in-vessel technology to produce a soil amendment product. The project start date based on a tentative timetable for bid submittal, award and construction is estimated around November 2011.

ENV is currently working to develop the structure for a long-term mixed material processing contract that would minimize the contractor risk associated with fluctuating commodity ratios and values. Concepts being explored include establishing a unit price for processing correlated to a minimum aggregate value per ton, with the City sharing in revenue accrued above the floor value. Another concept is to contract for processing only, with the City retaining ownership of the material and brokering separately. Research is still ongoing.

Impact of Curbside Recycling on the Community Recycling Bin Program:

Curbside collection and community recycling bins are complementary programs. Full roll-out of the curbside program will occur over the next two years. During that time, the community bins will continue to provide opportunities and convenience to increase recycling. In addition, this successful program has been supporting our schools for almost 20 years. Community recycling bins are used by the schools for recyclable containers and paper generated on campus and in classrooms, by single-family and condominium households in the surrounding residential community and by small businesses.

The community recycling bin program is currently expanding. Under a new contract which began in March 2008, the City is able to place another 40 multi-material recycling bins at school sites, plus the new contract offers special HI-5 recycling bins to support fundraising events at the schools or coordinated by non-profit organizations. There are a total of 145 community recycling bins included in this new contract which will support 120 multi-material bin sites (15 rotation service containers) and 10 continually rotating special HI-5 bins.

As the curbside collection system is rolled out around the island, adjustments will be made, as needed, to the community bin pickup frequency to correlate with changes in usage and activity. ENV will monitor service to maintain collection efficiency and convenience in the communities.

The reduction in bin service and quantity of material collected will result in a decrease in program costs related to haul charges and processing costs. Bin lease costs and maintenance costs are the only constant. As curbside recycling affects a shift from the community bin to the blue bin, the costs of the community bin program will decrease, even while maintaining the same complement of bins in the community.

*The **multi-material recycling bins** are placed full-time on school campuses for use by the school for campus- and classroom-generated recyclables, and for drop-off from the surrounding community. These bins accept the same types of materials as collected in the curbside blue bins – aluminum, glass, plastic 1 and 2, newspaper, corrugated cardboard – plus white and colored office paper.*



*The **HI-5 recycling bins** are partitioned into three sections for HI-5 glass, HI-5 plastic and HI-5 aluminum. Schools may request these bins whenever they are doing a HI-5 collection event to raise funds for band, Project Grad, PCNC activities, etc. The bin is dropped just for their event, and removed once they are done. The schools receive the full five cents per container collected and their volunteers do not need to haul bags to redemption centers or split revenues with the recycling company to haul.*



Recycling/Waste-to-Energy Balances:

ENV recommends continued evaluation of the balance between the recycling and waste-to-energy components of the City's waste management system. The City's overall goal is to significantly reduce waste to landfill. The Integrated Solid Waste Master Plan calls for this to be accomplished by increasing both material recycling and waste-to-energy (energy recycling). The study of the comparative benefits of material recycling and waste-to-energy, conducted by the consultant as part of the master planning process, concluded that the impact varies depending upon where the benefits accrue. Material recycling offers greater benefit when global impacts are considered, but waste-to-energy provided greater benefit to local, on-island sustainability.

Given the pressing need to reduce waste disposed in the landfill at Waimanalo Gulch, the City is moving forward quickly on all fronts – increasing recycling efforts, increasing H-POWER capacity and exploring the feasibility of shipping waste to mainland landfills, the latter being a temporary remedy. By 2011, H-POWER is expected to have the capacity to process an additional 300,000 tons.

Curbside recycling is expected to divert tonnage from H-POWER and provide capacity for additional MSW, thereby decreasing tonnage for landfill disposal. In determining the types of materials designated for recycling, the City targeted the higher value commodities with stable markets. Based on the evaluation in the comparative benefits study, the City has determined that the low-grade, low-value paper and plastics provide greater benefit in local energy production than in shipping to distant markets to be made into new products.

Current recycling programs target the higher value combustible materials – corrugated cardboard, newspaper, white and colored office paper, plastics #1 and #2 – and designate the low-value, low-grade combustibles -- such as junk mail, cereal boxes, telephone books, magazines, plastic tubs, polystyrene foam -- for the refuse bin for waste-to-energy. The value of these materials does not support the costs to ship to distant markets for new product recycling.

This determination is based on recycling markets and the value of power. As fuel costs continue to rise and the need to provide energy from waste increases, the City must continually evaluate this balance between material recycling and energy recycling (waste-to-energy). Regardless of which method is used, the goal of reducing waste to landfill will be accomplished.

Green waste, on the other hand, offers Oahu a fully sustainable, on-island, closed loop recycling system. No shipping to distant markets -- this material is mulched and composted on Oahu and returned for use on lawns and gardens. Expanding the City's ability to compost organics makes sense. Although this material is combustible, it does not support waste-to-energy with the same Btu (British thermal unit) value as paper and plastic.

Analysis of Overall Collection System Costs

Pilot Program Costs, Projected Islandwide Program Costs

Pilot Program Costs

Cost calculations for the pilot program include actual costs related to purchases and contracts, and include cost estimates related to manpower and operations. Manpower was used on an overtime basis for collection needs during the transition period and for the paid second-day refuse collection in Mililani, and in-house ENV staff handled the monitoring, data collection and evaluation. [Table 6](#) provides cost calculations for all pilot program components, but includes only the additional costs to the City in the total.

Projected Islandwide Expansion Costs

The full system is expected to operate efficiently with recycling pickup displacing one refuse pickup day. The predominant additional costs will be related to the purchase of the 260,000 recycling bins. When these costs are annualized over the 10-year life of the bins, the overall system costs are no greater than the current system. However, annualized costs are not the same as start-up costs. The total cost for 260,000 bins at \$90 each is \$23.4 million, which needs to be appropriated within the City's operating budget to support the expansion timetable.

[Table 7](#) provides a comparison of current collection system costs and collection including curbside recycling.

The projected collection system costs are presented for comparison only and should not be used for budgeting. The calculations include operating costs only. These costs do not include administration, education, monitoring or inspection. Any savings noted in manpower reductions for manual green waste or transfer of materials cannot be realized until actual manpower or operation costs can be reduced through attrition, reassignment or reductions in operations.

From a system-wide standpoint, the collection costs for the new curbside program are less than that of the system in place prior to curbside recycling, since manual green waste collection routes are eliminated and some transfer costs avoided. Recycling collection costs may be reduced further than shown in [Table 7](#) if recycling routes are combined. Refuse bin setout rates are always at 100%, but recycling bin setout may vary from 60-80% depending upon the neighborhood. This could allow routes to be adjusted, servicing a larger geographic area and more homes.

The cost comparison does not include costs associated with the startup transition periods, where twice-per-week refuse service will be maintained as households become accustomed to sorting and recycling. Once the rollout is complete, this additional cost will not reoccur. ENV plans to provide the additional transition period service on an overtime basis as was done in the pilot.

The cost projections assume that the green waste and mixed recyclable material will be delivered directly to the composting and recycling facilities, avoiding transfer costs associated with refuse collection from some regions of the island. This reduces transfer costs by almost \$1 million, even when additional fuel costs are factored in for the recycling routes.

The processing costs for refuse, green waste and mixed recyclables are equally calculated at \$50 per ton. Although the net cost to the City for the mixed recyclables in the pilot program is estimated at \$15 per ton, this includes the credit for the HI-5 beverage deposit containers which could vary as the program expands to other communities. Further, until long-term contracts are developed and bid, it seems prudent to be conservative in estimating processing costs for mixed recyclables.

The full system with curbside recycling includes 1,000 more tons than prior to curbside recycling. This accounts for the anticipated quantity that will shift from the community recycling bins to the blue curbside bins, based on the pilot data.

Table 6: Pilot Program Costs/Expenditures (Six Months: November 2007 – April 2008)

Containers¹	18,500 green bins @ \$70=\$1,295,000 18,500 blue bins @ \$60=\$1,110,000	\$2,405,000
Collection Service	Automated pickup green waste/mixed recyclables integrated into existing twice-weekly collection	No additional cost
	Transition period; continuation of second refuse pickup during first two months; Labor \$75,366 @ \$46.18/hour OT Fuel \$20,800; Truck Maintenance \$14,831	\$110,996
	Second-day paid additional refuse service; four months Labor \$16,680 @ \$46.18/hour OT Fuel \$6,240; Truck Maintenance \$6,845	\$29,765
Material Processing Costs	Mixed Recyclables ² @ \$15/ton x 1543 tons	\$23,145
	Green Waste ³ @ \$50/ton x 2762 tons	\$138,100
Community Education/Outreach⁴	Instructional brochure; calendar reminder stickers; packet assembly; “Opalagies” bin tag; follow-up mailers and postage	\$48,900
Public Survey⁵	Phone survey	\$20,210
Field Monitoring	ENV staff time estimated for Field Inspections: 1,241 hrs @ \$27/hr = \$33,507	No additional manpower over current staffing levels.
Customer Service	ENV staff time estimated for Recycling Staff (phones, customer service): six specialists @ 25% = \$42,000 total	
Project Evaluation	ENV staff time estimated for Data compilation, analysis, evaluation report 400 hours @ \$57/hour = \$22,800	
Administration 2nd-Day Paid Additional Refuse Service	Satellite City Hall implemented a temporary process to administer the sale of the second-day stickers. Sales were minimal.	
	ENV staff time estimated for Record and route coordination 360 hours @ \$27/hour = \$9,720	
	Stickers (9000) = \$3,026 Application forms = \$1,000	\$4,026
TOTAL		\$2,780,142
<p>¹FY07 container purchase, except for 11,200 blue bins already at homes in Mililani issued under 2004 rollout.</p> <p>²RRR Recycling Services sorted and processed the mixed recyclables. Two recycling companies submitted bids to process the material collected in the pilot project: RRR Recycling Services and Honolulu Recovery Systems. The contract was awarded to the low bidder.</p> <p>³Hawaiian Earth Products continued to process green waste under existing long-term contract awarded by bid.</p> <p>⁴ENV staff worked directly with graphic designers and printers awarded by bid. Some materials were printed at the City’s inhouse print shop. Packet assembly handled by container delivery vendor.</p> <p>⁵QMark Research & Polling was selected to conduct the survey.</p> <p>Hourly rates include fringe benefits.</p> <p>Direct costs only: cost calculations presented here do not include indirect costs (e.g., CASE, administration, overhead, other City agency support, rent, utilities, etc.)</p>		

Table 7: Projected Islandwide Program Costs

	Current System	Full System with Curbside Recycling
SALARIES	\$ 10,559,854	\$ 7,876,428
56 MSW Routes	\$7,876,428	
9 GW Manual Routes	\$2,683,426	
28 MSW Routes		\$3,938,214
14 GW Routes		\$ 1,969,107
14 MR Routes		\$ 1,969,107
BINS (MSW & GW \$90/bin, MR \$80/bin; @ 5%, 10 Yrs.)	\$ 1,864,866	\$5,536,580
MSW (160,000 Gray)	\$1,864,866	
GW (No Carts)		
MSW (160,000 Gray + 3% Extra)		\$1,920,812
GW (160,000 Green + 5% Extra)		\$1,958,109
MR (160,000 Blue)		\$1,657,659
PROCESSING (MSW \$50/ton; GW \$50/ton, MR \$50/ton)	\$ 14,750,000	\$14,800,000
MSW (275,000 tons)	\$13,750,000	
GW Manual (20,000 tons)	\$ 1,000,000	
Total 295,000 tons		
MSW (221,000 tons)		\$ 11,050,000
GW (48,000 tons)		\$ 2,400,000
MR (27,000 tons)		\$ 1,350,000
Total 296,000 tons		
TRUCK PURCHASE (Automated \$300,000/truck @ 5%, 7 Yrs; GW Manual \$210,000/Truck @ 5%, 10 Yrs.; 1.4 Trucks/Route)	\$4,501,223	\$4,147,676
MSW (80 Trucks)	\$ 4,147,676	
GW Manual (13 Trucks)	\$ 353,547	
MSW (40 Trucks)		\$ 2,073,838
GW (20 Trucks)		\$ 1,036,919
MR (20 Trucks)		\$ 1,036,919

TRUCK MAINTENANCE (MSW Automated \$30,000/Truck/Yr.; GW&MR Automated \$33,000/Yr; GW Manual \$7,500/Truck/Yr.)	\$ 2,497,500	\$ 2,520,000
MSW (80 Trucks)	\$ 2,400,000	
GW Manual (13 Trucks)	\$97,500	
MSW (40 Trucks)		\$ 1,200,000
GW (20 Trucks)		\$ 660,000
MR (20 Trucks)		\$ 660,000
TRUCK FUEL (MSW Automated 40 Gallons/Truck/Day; GW&MR Automated 55 Gallons/Truck/Day; GW Manual 30 Gallons/Truck/Day; @ \$5/Gallon)	\$ 3,915,600	\$ 4,149,600
MSW (56 Routes)	\$ 3,494,400	
GW Manual (9 Routes)	\$ 421,200	
MSW (28 Routes)		\$ 1,747,200
GW (14 Routes)		\$ 1,201,200
MR (14 Routes)		\$ 1,201,200
TRANSFER STATION (52% of MSW transferred @ \$40/ton transfer cost)	\$ 5,720,000	\$ 4,600,000
MSW (143,000 Tons)	\$ 5,720,000	
GW Manual (Not Transferred)		
MSW (115,000 Tons)		\$ 4,600,000
GW (Not Transferred)		
MR (Not Transferred)		
TOTAL SYSTEM COST	\$ 43,809,043	\$ 43,630,283
Total System Cost (Rounded)	\$ 43,810,000	\$ 43,630,000
MSW (Municipal Solid Waste); GW (Green Waste); MR (Mixed Recyclables)		
Direct costs only: cost calculations presented here do not include indirect costs (e.g., CASE, administration, overhead, other City agency support, rent, utilities, etc.)		

EXHIBIT A

Participant Instructional Brochure (Content)

How we manage our island's waste will affect generations to come. Let's work together to do right for Hawaii.

This new curbside recycling program will divert thousands of tons from our landfill, but it means changing how we manage our household waste. It's bound to require some adjustments in your daily routine. Please call us with questions or problems, and our recycling team will do its best to make the system work for you. Your feedback during this initial stage of implementation is important as the City moves toward expanding curbside recycling islandwide.

Recycling starts with each of us. So please, give this program your support.

Mahalo. Mayor Mufi Hannemann



What you need to know:

About Your Refuse and Recycling Bins

Your household will have a complement of three bins for sorting your waste – gray for refuse, green for green waste, and blue for mixed recyclables.

Additional bins are available to accommodate larger generating households.

Please see *About Additional Bin Options*.

About Sorting

Green waste includes grass, tree and hedge trimmings; Christmas trees (no ornaments or flocking).

Mixed recyclables include newspaper, corrugated cardboard, glass bottles and jars, aluminum cans and plastic bottles (#1 and #2 plastic codes).

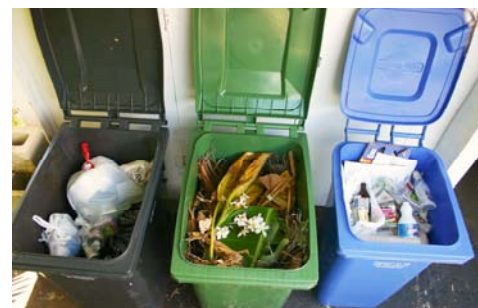
Rinse containers. Remove lids. Labels are okay.

No other paper, magazines, telephone books, glossy paper, cereal or tissue boxes. No other glass, such as drinking glasses, ceramics, window glass. No other plastic, such as polystyrene foam, plastic tubs, plastic bags, plastic toys.



About Your Collection Schedule

Your current collection days will remain the same. For example, if your refuse is currently picked up on Monday and Thursday, your new collection days will also be Monday and Thursday. In the new system, your first collection day is for refuse in the gray bin and the second day is for recycling pickup, alternating weekly between the green and blue bins. Mililani, first week, set out your blue bin. Hawaii Kai, first week, set out your green bin. The optional second-day refuse pickup service is provided on your second collection day as well for those who pay the fee. Please see *About Additional Refuse Pickup Service* and *About Requesting Second-Day Refuse Service*.



About Additional Bin Options

If your household consistently generates more than the average quantity of green waste or refuse, you can request additional bins at no charge. You may request up to two additional green bins for green waste. A second gray bin can be issued to households with large families and greater amounts of refuse, and set out in tandem on your once per week pickup day. There is no charge for these additional bins; however, the households will be asked to demonstrate need. Households requesting an additional gray refuse bin must be fully recycling to qualify. Please call the City's Recycling Office at 768-3200 to make your request. Please be prepared for City personnel to inspect and monitor your refuse setout.



About Additional Refuse Pickup Service

If your home is in the Mililani community, you have the option of purchasing second-day refuse pickup service for a fee of \$10 per month (*subject to City Council approval*). Hawaii Kai households are being asked to work within the simpler system of one collection day for refuse and one collection day for recyclables each week, with no option for additional refuse pickup. Curbside recycling is being launched in these two communities with all of the program elements identical except for the second day refuse options. The purpose is to allow the City's Department of Environmental Services to clearly determine the need for a second refuse pickup and the effectiveness on recycling rates and participation by comparing results from the two project areas. This information will be used to make adjustments to the system before the program is expanded islandwide. Your feedback is greatly appreciated. Please call us at 768-3200 or email info@opala.org.





About Getting Comfortable With the New System





A two-month transition period will allow residents in both pilot communities to adjust to the new system. Twice-weekly refuse collection will continue for two months at no charge while you get accustomed to sorting recyclables into the blue and green bins and see how much waste remains in your gray bin for refuse pickup. These two months will give you time to determine if you need additional bins or service.

About Requesting Second-Day Refuse Service

Beginning the week of January 7, 2008, Hawaii Kai will no longer receive a second refuse pickup each week and those in Mililani opting for this service will need to purchase a special sticker for their refuse bin. The cost for this additional service is \$10 per month. Second-day refuse service stickers will be sold at Satellite City Halls. You can purchase a quarterly service sticker for \$30. Please call 768-3200 to request an application form or you can pick one up at a Satellite City Hall.

Current Collection System	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	Refuse			Refuse		

New Collection System	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	Refuse					
	Refuse					
Hawaii Kai <i>Start program, first week: green waste</i>	Refuse					
	Refuse					

New Collection System	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	Refuse					
	Refuse					
Mililani <i>Start program, first week: mixed recyclables</i>	Refuse					
	Refuse					

Optional 2nd refuse pickup for \$10/month (Mililani only)

- Additional Green Bin for high volume green waste (no charge)
- Additional Gray Bin for high volume refuse, collected once per week (no charge)

Tips for sorting, recycling and reducing waste and litter:

- Set aside an area in your kitchen, perhaps under the sink, to place a small collection container for mixed recyclables for your family's convenience. All of the recyclables can be mixed together, so all you need is a single container.
- Deposit green waste directly into the bin as you do your yard work – it's convenient and eliminates the need to purchase yard bags.
- Deposit loose green waste and mixed recyclables into your bins. Avoid using bags *as much as possible*.
- All material must fit in the bin with the lid closed. Bins with green waste, refuse or boxes protruding out the top cannot be collected. Please cut branches, flatten boxes.
- Heavy amounts of grass clippings may be bagged to prevent clumping. Or place cut branches in the bottom of the bin to help the material slide out during collection.
- Meter your green waste over more than one collection day if your household generates high volumes of green waste sporadically, but not consistently for every pickup. Green waste pickup is provided every other week, while most households do yard work monthly. It may not be possible to set out all of your green waste on the very next single collection day. You may need to distribute it over the two or more collection days provided each month.
- Consider leaving grass clippings on your lawn as you mow to reduce your volume of green waste – it's called grass-cycling and adds nutrients to the soil. A full year of grass-cycling is equivalent to one fertilizer treatment.
- Another volume reducing technique is to allow leaves and branches to sit in a pile and dry out for about a week before putting them into your bin.
- Bag all garbage before placing into your refuse bin. Keep the lid of your refuse bin closed and covers on all garbage receptacles around your home.

Additional Drop-off Options

Households may also drop off refuse, bulky items and green waste at any of the City's Convenience Centers, or green waste can be taken directly to the composting facility. There is no charge. If you take your green waste to the composter, you can also use this opportunity to pickup free mulch.

Refuse & Recycling Convenience Centers

Open seven days; 7:00am – 6:00pm

Closed Christmas and New Year's Day

Ewa, Geiger Road

Laie, Kamehameha Highway

Wahiawa, Wilikina Drive

Waianae, Plantation Road

Waimanalo, Hihimanu Street

Waipahu, Waipahu Depot Street

Kawailoa (Haleiwa), Kawailoa Road

Kapaa (Kailua), Kapaa Quarry Road

Composting Sites

Hawaiian Earth Products

Leeward, Campbell Industrial Park

Mon-Fri, 7:00am-3:30pm

Sat-Sun, 7:30am-3:00pm

682-5895

Windward, Kapaa Quarry Road, Kailua

Open seven days, 7:00am-4:30pm

261-5877

Exhibit B Town home Notices

To: **Residents of Mililani Pinnacles**
From: City & County of Honolulu, Recycling Office
Subject: New Curbside Recycling Pilot Project – Modified for Mililani Pinnacles

In coordination with your board of directors, it was determined that the individual town homes in the Mililani Pinnacles did not generate enough green waste nor have space to store an additional green bin. Pinnacle residents will not be receiving a green bin for the new curbside recycling program. Landscaping for your property is done by a private company that removes the green waste.

You already have a blue bin for mixed recyclables. If you would like to receive a green bin for green waste, please consult with your board or property manager (Hal Brown at 836-0911) and contact Irobela Wreagh at 768-3425 or call the general recycling line at 768-3200.

The instructional brochure provides information about the new three-bin collection system. All components of the new recycling program apply to you, except for those related to green waste and green bins if you don't have a green bin.

To: **Residents of Hampton Court**
From: City & County of Honolulu, Recycling Office
Subject: New Curbside Recycling Pilot Project – Modified for Hampton Court

In coordination with your board of directors, it was determined that the individual homes in Hampton Court did not generate enough green waste nor have space to store an additional green bin.

Hampton Court residents will not be receiving a green bin for the new curbside recycling program. Centralized green bins will be made available for ground maintenance staff.

You already have a blue bin for mixed recyclables. If you would like to receive a green bin for green waste, please consult with your board or property manager (Martha Scheller at 837-5272) and contact Irobela Wreagh at 768-3425 or call the general recycling line at 768-3200.

The instructional brochure provides information about the new three-bin collection system. All components of the new recycling program apply to you, except for those related to green waste and green bins if you do not have a green bin.

To: **Residents of Kuapa Isle**
From: City & County of Honolulu, Recycling Office
Subject: New Curbside Recycling Pilot Project – Modified for Kuapa Isle

In coordination with your board of directors, and general manager, it was determined that the individual homes in Kuapa Isle did not have space to store additional blue and green bins for the new program. Instead a centralized set of green and blue bins have been placed in the trash bin area for use by all residents.

If you would prefer to have a blue bin for mixed recyclables or a green bin for green waste at your home, please contact your general manager - Ben Kapuniai at 396-8080.

The instructional brochure provides information about the new three-bin collection system. All components of the new recycling program apply to you, except that set out of the blue/green bins on recycling day will be handled by your property manager from the central recycling area.

To: **Residents of Koko Isle**
From: City & County of Honolulu, Recycling Office
Subject: New Curbside Recycling Pilot Project – Modified for Koko Isle

In coordination with your board of directors, and property manager, it was determined that the individual town homes in Koko Isle did not have space to store additional blue and green bins for the new program. Instead, a centralized set of green and blue bins will be located in the club house parking lot for use by all residents.

If you would prefer to have a blue bin for mixed recyclables or a green bin for green waste at your home, please contact your resident manager (Bruce Thompson at 395-3355).

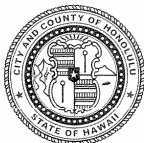
The instructional brochure provides information about the new three-bin collection system. All components of the new recycling program apply to you, except that set out of the blue/green bins on recycling day will be handled by your property manager from the central recycling area.

Exhibit C
Second-Day Refuse Service Sticker



Exhibit D

Second-Day Refuse Service Application Form



DEPARTMENT OF CUSTOMER SERVICES
DEPARTMENT OF ENVIRONMENTAL SERVICES • PHONE ENV RECYCLING 768-3200
REQUEST FOR PAID SECOND WEEKLY TRASH PICKUP
(FOR MILILANI ONLY)

Second-day refuse stickers are sold at Satellite City Halls.
Call to request an application (768-3200 ENV Recycling) or pick up at Satellite City Halls.

PLEASE PRINT

Date: _____

SERVICE IS REQUESTED AT:

Address: _____

Address: _____

City: _____ State: HI Zip: 96789

Name: _____ Phone: _____

Signature: _____

BILLING ADDRESS IF DIFFERENT FROM ABOVE:

Address: _____

Address: _____

City: _____ State: HI Zip: 96789

PLEASE CHECK APPLICABLE BOX:

	MONTHLY COST	TOTAL (3 months)
<input type="checkbox"/> JAN - MAR 08.....	\$10.00.....	\$30.00
<input type="checkbox"/> APR - JUN 08.....	\$10.00.....	\$30.00
<input type="checkbox"/> JUL - SEPT 08.....	\$10.00.....	\$30.00
<input type="checkbox"/> OCT - DEC 08.....	\$10.00.....	\$30.00

TOTAL PAID with APPLICATION: \$ _____

CASH ONLY

CONTROL NUMBER: _____



**Please
place your
sticker on
the front of
the cart just
below the
lid.**

Department of Customer Services must receive the application no later than 15 days prior to the start of the service quarter. Mid-quarter, prorated requests cannot be accommodated. Fee is non-refundable. Request cannot be transferred to a new address after the application for the service quarter is received by the Customer Services Department.
Paid second weekly trash pickup is subject to compliance with the provisions of Chapter 9, Revised Ordinances of Honolulu 1990, as amended.

WHITE - ENV

YELLOW - CSD

PINK - CUSTOMER

Exhibit E One-Month Follow-Up Mailer (Content)

Aloha, Mililani and Hawaii Kai

You have just completed the first month of the new curbside recycling pilot project. Thank you for your efforts, your questions and your feedback thus far.

By now you have gotten into a routine for sorting and recycling, and had an opportunity to note how much recyclable stuff goes into your blue and green bins and how much non-recyclable waste is left in your gray refuse bin for disposal. Check the What to Recycle list on the reverse side for more information.

This notice is a reminder of the upcoming changes in your collection system. Starting the week of January 7, 2008, the two-month transition period will conclude and the second weekly refuse pickup will be eliminated.

- Both Mililani and Hawaii Kai will continue receiving the basic service of twice-weekly collection -- the first day for refuse in your gray bin and the second day for recycling, alternating weekly between the blue and green recycling bins. Check monthly collection calendars posted online at www.opala.org.
- Both communities can request additional green bins for green waste at no charge, and an additional gray bin for refuse, if needed, at no charge. However, you must be fully recycling to qualify for an additional gray refuse bin. City supervisors will monitor your refuse for a two- to three-week period to confirm need before issuing an additional gray bin. Allow 5 feet between bins at curb for operator pickup.
- Mililani households have the additional option to pay for a second refuse pickup each week for a fee of \$10 per month, \$30 per quarter. The second-day refuse service can be purchased at Satellite City Halls. Applications and payment must be submitted no later than 15 days prior to the service quarter. For the first quarter service beginning in January, the deadline would be December 15. Application forms are available at Satellite City Halls or call 768-3200 to have the form mailed to you.

The City Department of Environmental Services will be gathering data throughout the pilot project -- monitoring the recycling trucks as they unload at the recycling and composting facilities, counting bin setout, and tracking the quantity and quality of the collected materials. You may have noticed the Opala Team checking blue and green bins very early in the mornings.

Your feedback is very important to the evaluation process. We will be conducting a formal survey sometime in March/April after you have had more experience with the new program, and your questions and input are welcome throughout the project.

Mahalo.

continued next page

MIXED RECYCLABLES

Aluminum Cans

Rinse

Glass Bottles and Jars

Rinse, remove and discard lids and tops; okay to leave labels on

Plastic Containers # 1 and # 2 only

Look for the plastic number code in a triangle embossed on plastic containers.

Number 1 and 2 plastics include all bottles, such as beverage, detergent, shampoo, vitamin; and some other container types.

Rinse, remove and discard lids and tops

Newspaper

Remove magazines and glossy inserts

Cardboard (corrugated only)

Flatten boxes and fit into bin

No single layer chipboard, such as cereal boxes, detergent boxes, tissue boxes, etc.

Deposit all items loose into your blue bin.

Do not bag, tie or bundle recyclable materials.



GREEN WASTE



Yard trimmings, leaves, grass clippings,
Christmas trees (no ornaments, tinsel or flocking)

Avoid using plastic yard bags as much as possible.

REFUSE

All other opala goes into your gray refuse bin, including:

- Plastic bags
- Styrofoam
- Junk mail or magazines
- Telephone books
- Cereal boxes and other chipboard
- Paper other than newspaper and corrugated cardboard
- Plastic containers other than #1 and #2 (plastic codes 3-7)

These low-grade papers and plastics are combustible and provide greater benefit to the island in local energy production than shipping to distant markets to be made into new products.

- Tin or steel food cans

No need to sort. Ferrous metals are recycled at H-POWER.

- Ceramics, dishes, glassware, window glass,
light bulbs, mirrors

Exhibit F

Reminder Postcard Second-Day Refuse Service (Content)

Aloha! This reminder notice is being sent to households in the Mililani pilot curbside recycling program that have purchased additional 2nd-day refuse collection service or expressed interest. It is intended to clarify some questions about the service, the deadlines for purchasing, and no-cost options available to you. Please call if you have further questions.

2nd-day Refuse Collection Applications and Payment

The applications may be mailed to your home or you can pick them up at any Satellite City Hall. Transactions cannot be done via mail.

Applications and payment must be submitted at a Satellite City Hall no later than 15 days prior to the service quarter. Cash only.

First quarter service requests closed.

- For the 2nd quarter service beginning April 1, the **deadline for payment is March 15.**
- For the 3rd quarter service beginning July 1, the **deadline for payment is June 14.**
- For the 4th quarter service beginning October 1, the **deadline for payment is September 15.**

No Cost Options are available to help you manage large volumes of green waste and non-recyclable refuse.

- You can request additional green bins for green waste at no charge.
- You can request an additional gray bin for refuse, if needed, at no charge. However, you must be fully recycling to qualify for an additional gray refuse bin. City supervisors will monitor your refuse for a two- to four-week period to confirm need before issuing an additional gray bin. *When setting out multiple bins, please allow 5 feet between bins at curb for operator pickup.*

Collection Service Coordination

Once we receive your application for the additional service, your address is placed into a GIS route map which is given to the collection operator. The operator provides service only to those streets on his route map showing paid service subscribers. The 2nd-day refuse service sticker that you purchased and placed on your refuse bin provides confirmation to the collection operator that you paid for the service. The operator does not drive up and down every street searching for stickers, and he will not provide service to addresses without a sticker and not on the route map.

Thus far, approximately 400 households in Mililani and Mililani Mauka have opted to purchase the additional refuse collection service out of a total of 12,000 homes. Service to these 400 households is distributed over three different collection days.

Exhibit G Recycling Bin Tag

Side one

“Opalagies”

Thank you for participating in the Curbside Recycling Pilot.
We appreciate your effort, but your separation requires further attention.
Please see the marked items below.

- ☐ Your recycling container needs to be set out on the street next to the front curb so we can easily get to it.

MIXED RECYCLABLES

- ☐ We found tin and/or steel food cans in your mixed recyclables. Please include these items with your regular refuse.
- ☐ We found non-recyclable glass in your mixed recyclables. Ceramics, dishes, glassware, window glass, and glass from light bulbs and mirrors are NOT recyclable and should be included in your regular trash.
- ☐ We found non-recyclable plastic containers in your mixed recyclables. Tofu, yogurt and other plastic tubs are NOT recyclable. Only #1 and #2 plastics are recyclable. Automotive and garden products, such as herbicides and pesticides, are also NOT recyclable. These should be included in your regular trash.
- ☐ We found mixed paper, junk mail, telephone books and/or magazines in your mixed recyclables. Only newspaper and corrugated cardboard are recyclable.
- ☐ We found trash mixed with your recyclables.

GREEN WASTE

- ☐ Please cut your branches or large pieces of green waste so that everything fits in the bin with the lid closed.
- ☐ Do not put dirt, rocks, sod, manure, trash, lumber, or sawdust in your green waste bin.
- ☐ Do not pack your green waste container too tightly. Our workers need to dump it out easily.
- ☐ We found plastic bags in your bin. Please avoid using plastic bags as much as possible.
- ☐ We found trash mixed with your green waste.

OOPS! WRONG COLLECTION DAY

- ☐ Today is green waste collection (green bin).
- ☐ Today is mixed recyclables collection (blue bin).
- ☐ Today is recycling and your bin contains trash.

Mahalo for doing your part to recycle!



Department of Environmental Services
Refuse Division

Side two

What to Recycle:

MIXED RECYCLABLES





Aluminum Cans
Rinse



Glass Bottles and Jars
Rinse, remove lids and tops, okay to leave labels on



Plastic Containers  and 
Rinse, remove lids and tops



No plastic that has contained automotive fluids (such as brake fluid, oil, antifreeze and car additives) or garden and lawn products (such as fertilizers, herbicides and pesticides). These empty product containers can be put in the trash. If there is leftover product requiring disposal, see "household hazardous waste" instructions online at www.opala.org or call 768-3201.



Newspaper
Remove magazines and glossy inserts



Cardboard (corrugated only)
Flatten boxes and fit into bin
No cereal boxes, detergent boxes, tissue boxes, etc.

GREEN WASTE



Yard trimmings, leaves, grass clippings,
Christmas trees (no ornaments, tinsel or flocking)

OUR "OPALAGIES"

The following items **SHOULD NOT** be included in the curbside recycling bin:

- No tin or steel food cans
- Ferrous metals are extracted from the refuse and recycled at H-POWER.
- No ceramics, dishes, glassware, window glass, light bulbs, mirrors
- No plastic bags
- No Styrofoam
- No junk mail or magazines
- No telephone books
- No paper other than newspaper and corrugated cardboard

When in doubt...call us.
768-3200


OPALA.org
Don't Dump on Hawaii. Sort it Out.

Exhibit H
Participant Survey Questions

**CURBSIDE RECYCLING PILOT PROGRAM
FEEDBACK STUDY**

QMark Research

March 2008

Hello, I'm _____ from **QMark Research & Polling**. We're conducting a survey today/this evening for the City and County of Honolulu. This is strictly a research survey as we do no product promotion or selling. May I speak to someone 18 years of age or older who lives in this household?

(REPEAT GREETING ONCE APPROPRIATE PARTY IS ON THE TELEPHONE.)

- A. Are you or is anyone in your household employed in marketing, market research, advertising, or public relations?
IF "YES," → THANK AND TERMINATE, CODE ON CALL RECORD SHEET.
IF "NO," → CONTINUE
- B. **Are you a resident of Mililani/Hawaii Kai?**
IF "NO," → THANK AND TERMINATE, CODE ON CALL RECORD SHEET.
IF "YES," → CONTINUE
- C. If Mililani resident, ask:
Do you live in Waipio Acres or Launani Valley?
IF "YES," → THANK AND TERMINATE, CODE ON CALL RECORD SHEET.
IF "NO," → CONTINUE
- D. Do you live in a....
1 Single Family home
2 Townhouse → THANK AND TERMINATE, CODE ON CALL
3 Condo/Apartment building → THANK AND TERMINATE, CODE ON CALL
RECORD SHEET.
- E. Just to confirm, is your household located within the City & County's curbside recycling pilot program area? And are you the best person in your household to respond to some questions about this recycling program?

IF "NO," → THANK AND TERMINATE, CODE ON CALL RECORD SHEET.
IF "YES," → CONTINUE
1. Do you currently have a City provided blue bin in which your household can put mixed recyclables for collection?
1 Yes
2 No THANK AND TERMINATE

2. How often do you put your mixed recyclables bin on the curb for collection - every two weeks, about once each month, less often than once a month or never?

- 1 Every two weeks
- 2 About once each month
- 3 Less often than once a month
- 4 Never (GO TO Q4a)
- 5 Don't know/Refused

3. What kind of recyclable materials do you put in your blue bin? Just for your information, not all of the materials on the list I will read you are actually accepted in the program **(READ LIST)**

Do you put (insert material) in your blue bin?

		Yes	No
1	newspapers	1	2
2	corrugated cardboard	1	2
3	glass bottles and jars	1	2
4	aluminum cans	1	2
5	plastic bottles	1	2
6	magazines	1	2
7	telephone books	1	2
8	glossy paper	1	2
9	cereal or tissue boxes	1	2
10	plastic bags, plastic toys, polystyrene foam, plastic tubs	1	2
11	drinking glasses, ceramics, window glass	1	2

[IF ANSWERED "NEVER" IN Q1, ASK]

- 4a. Earlier you said you do not set out your blue recyclables bin, could you tell us why? Is it because....

(READ LIST; SELECT ALL THAT APPLY)

- 1 You take cans and bottles to the HI5 Redemption Centers
- 2 You deposit recyclables at the school/community drop-off bins (or "White Bins")
- 3 Too much trouble to store
- 4 Don't have these types of recycleables (cans, bottles, etc.)
- 5 Or some other reason (specify_____)
- 6 You are not recycling

[IF ANSWERED "EVERY 2 WEEKS, ABOUT ONCE A MONTH OR LESS OFTEN THAT ONCE A MONTH" IN Q2, ASK]

- 4b. In addition to putting your blue bin on the curb for collection, are you recycling in the following ways...

(READ LIST; SELECT ALL THAT APPLY)

- 1 You take cans and bottles to the HI5 Redemption Centers
- 2 You deposit recyclables at the school/community drop-off bins (aka "White Bins")
- 3 Or some other recycling program (specify_____)
- 4 Do not participate in additional programs

Now we'd like to ask you a few questions about your city provided green bin.

6. How often do you put your greenwaste bin on the curb for collection - every two weeks, about once each month, less often than once a month or never?

- 1 Every two weeks (GO TO Q8)
- 2 About once each month (GO TO Q8)
- 3 Less often than once a month (GO TO Q8)
- 4 Never
- 5 Don't know/Refused

7. If you do not set out your greenwaste bin, could you tell us why?

(DO NOT READ LIST)

- 1 I do not have any greenwaste
- 2 I do backyard composting; turn my greenwaste into mulch
- 3 I haul/drop off my greenwaste to the City's convenience center
- 4 I haul/drop off my greenwaste to a composting center
- 5 I do not recycle my greenwaste
- 6 Other (specify_____)

8. Have you requested a second green bin to hold your household's green waste?

- 1 Yes
- 2 No

Now we'd like to ask you a few questions about your city provided gray bin for garbage/refuse collection.

10. Have you needed to request a second gray bin to hold your household's garbage/refuse?

- 1 Yes
- 2 No

- 10a. Has once per week garbage collection caused any odor or vector issues such as insects or rodents for your household?
- 1 Yes
 - 2 No
 - 3 Sometimes

[IF THEY RESPONDEND “YES” OR “SOMETIMES IN Q10A., ASK]

- 10b. Are the issues you’ve experienced with odor, vectors, meaning insects or rodents or both?
- 1 Odor
 - 2 Vectors Insects or Rodents
 - 3 Both
- 10c. Do you feel that the odor/vectors are manageable or are they a real problem for your household?
- 1 Manageable
 - 2 It’s a problem
 - 3 Don’t Know

Q11-12 for Mililani households only

11. Have you purchased second-day refuse pickup service for a fee of \$10 per month?
- 1 Yes (Go to next question)
 - 2 No

[IF ANSWERED ‘YES’, IN Q11, ASK]

12. Why did you purchase this second-day refuse pickup service?
(DO NOT READ LIST)
- 1 Too much garbage generated by household
 - 2 Simply don’t like garbage to sit around for a full week
 - 4 The \$10 fee is cheap enough for me to purchase this service
 - 5 Feel it’s unhealthy/unsafe to have garbage sit for a full week
 - 6 Just in case; for convenience in the future; occasionally I have too much garbage.

13. Which of the following statements best describes how you feel about the curbside recycling pilot program?
- 1 I like participating in the curbside recycling program and do not think I need the extra refuse pickup each week
 - 2 I like participating in the curbside recycling program but think I need the extra refuse pickup each week at the \$10 per month charge
 - 3 I dislike participating in curbside recycling and prefer to put all my refuse in one bin
14. How long did it take your household to transition or get used to this new curbside recycling program? Would you say....
- 1 Less than a month
 - 2 About a month
 - 3 About 2 months
 - 4 More than 2 months
 - 5 Still not sure how it works exactly
15. How do you find the process of sorting out your recyclables from your refuse? Would you say it is....
- 1 Very Easy
 - 2 Somewhat Easy
 - 3 Somewhat Difficult or Troublesome
 - 4 Very Difficult or Troublesome
16. What aspects of the curbside recycling program do you find confusing or frustrating? **(DO NOT READ LIST)**
- 1 Can't recycle certain materials such as magazines, cereal boxes, tissue boxes, plastics
 - 2 The pick-up schedule for the various bins
 - 3 Once a week refuse pick-up
 - 4 \$10 fee for second-day refuse pick-up
 - 5 Other (specify_____)
 - 6 Nothing
 - 7 Hassle to separate garbage
 - 8 Bins take up too much space
 - 9 Bins are an eyesore
17. Now that the curbside recycling program is in place in your community, are you finding that the amount of materials your household has to recycle is....
- 1 More than what you thought it would be
 - 2 Just about what you thought it would be
 - 3 Less than what you thought it would be

18. Do you recall seeing any of the following educational materials describing the curbside recycling program?

	Yes	No	Not Sure /Don't know
a. Newspaper articles	1	2	3
b. A blue brochure attached to your blue bin from the City which included bin and calendar stickers	1	2	3
c. Direct mail letter from the City that served as a reminder/follow-up on what is recyclable	1	2	3

[IF ANSWERED 'YES' TO Q18B ABOVE ASK:]

- 19a. Are you using the stickers for your bins and calendar that came with the brochure from the City & County?

- 1 Yes
2 No

20. How effective or useful do you find the informational materials provided by the City explaining the curbside recycling program?
Would you say the materials are.....

- 1 Very effective/useful
2 Somewhat effective/useful
3 Not effective or useful at all

21. Have you ever called the City's recycling phone number for assistance?

- 1 Yes
2 No

[IF YES, ABOVE ASK]

- 21a. How helpful were they?

- 1 Very helpful
2 Somewhat helpful
3 Not helpful at all

22. In the last year, have you attended a community meeting concerning recycling or solid waste management for the City & County of Honolulu?

- 1 Yes
2 No

23. Are you aware that the materials from your gray bin go to H-Power to produce electricity?

- 1 Yes
2 No

24. Is there anything else you'd like to tell us about the pilot recycling program in your area?
-
-

And now a few last questions for classification purposes only....

- D1. Do you have access to the internet?

- 1 Yes
- 2 No (GO TO QD2)

- D2. Have you ever visited the opala.org website?

- 1 Yes
- 2 No

[IF ANSWERED 'YES' IN D2, ASK]

- D3. What was the primary purpose for visiting the opala.org website?

(DO NOT READ LIST)

- 1 Check on bin pick-up schedules
- 2 Interested in requesting more green bins
- 3 Interested in requesting more gray bins
- 4 Interested in purchasing second-day refuse pickup
- 5 Find information on recycling issues
- 6 Find information on bulky item pickup
- 7 Find information on greencycling or mulch
- 8 Other (specify_____)

[IF ANSWERED 'YES' IN D2, ASK]

- D4. How effective or useful do you find the information provided on the opala.org website? Would you say the information is

- 1 Very effective/useful
- 2 Somewhat effective/useful
- 3 Not effective or useful at all

- D5. Do you own or rent your home?

- 1 Own
- 2 Rent

- D6. Including yourself, how many people live in your household?

- D7. What was your age on your last birthday?

- D8. What is the age of the "number one" recycler in your household?

- D9. What was the last level of education you completed?

- 1 High school/GED
- 2 Some College
- 3 Trade school, Junior College or Military
- 4 Four Year College Degree
- 5 Post-graduate
- 9 REFUSED

D10. How many years have you lived in Hawaii? Would you say ...

- 1 less than five years
- 2 5 years but less than 10
- 3 10 years but less than 20
- 4 20 years or more
- 5 All your live
- 9 REFUSED

D11. What is your ethnic identification?

[IF MORE THAN ONE, ASK "WITH WHICH DO YOU IDENTIFY THE MOST". IF NO CHOICE, CIRCLE MIXED)

- 1 Caucasian
- 2 Japanese
- 3 Chinese
- 4 Filipino
- 5 Hawaiian/Part-Hawaiian
- 6 African-American
- 7 Other (SPECIFY:) _____
- 8 Mixed
- 9 REFUSED

D12. Finally, I will read some broad categories of income and I would like you to tell me when I come to the category that includes your household's income before taxes for 2007. Please consider and include in your thinking the income of all persons living in your household as well as income from all sources including investments, retirement funds, etc.

[INTERVIEWER: READ CATEGORIES]

Again, just stop me when I come to the correct category.

- 1 Less than \$25,000
- 2 \$25,000 but less than \$50,000
- 3 \$50,000 but less than \$75,000
- 4 \$75,000 but less than \$100,000
- 5 \$100,000 and over
- 9 DON'T KNOW/REFUSED

D13. [Record, DO NOT ASK:] Gender 1 = Male 2 = Female

D14. [Record, DO NOT ASK:] Telephone prefix

***Those are all the questions I have, thank you for participating in our survey!
May I please have your first name, just in case my supervisor needs
to verify I did this survey?***

Name _____ Telephone number _____

Exhibit I
Participant Survey Responses

**CURBSIDE RECYCLING
PILOT PROGRAM
FEEDBACK SURVEY
APRIL 2008**

Prepared for:
City & County of Honolulu

Prepared by:
QMark Research & Polling

BACKGROUND AND METHODOLOGY

The City & County of Honolulu has contracted QMark Research & Polling to conduct a quantitative study in the form of a telephone interview. A sample of 400 respondents residing in Mililani and 400 respondents residing in Hawaii Kai was quelled from QMark's Random Digit Dialing software beginning on April 11th and concluding on April 24th, 2008. A sample of this size (n=800) has a margin of error of +/- 3.46 percentage points with a 95% confidence level.

Respondents were screened to ensure they are at least 18 years of age, are full-time residents of the State of Hawaii, live in a single family home and do not work in marketing, market research, advertising, public relations or for the City and County of Honolulu.

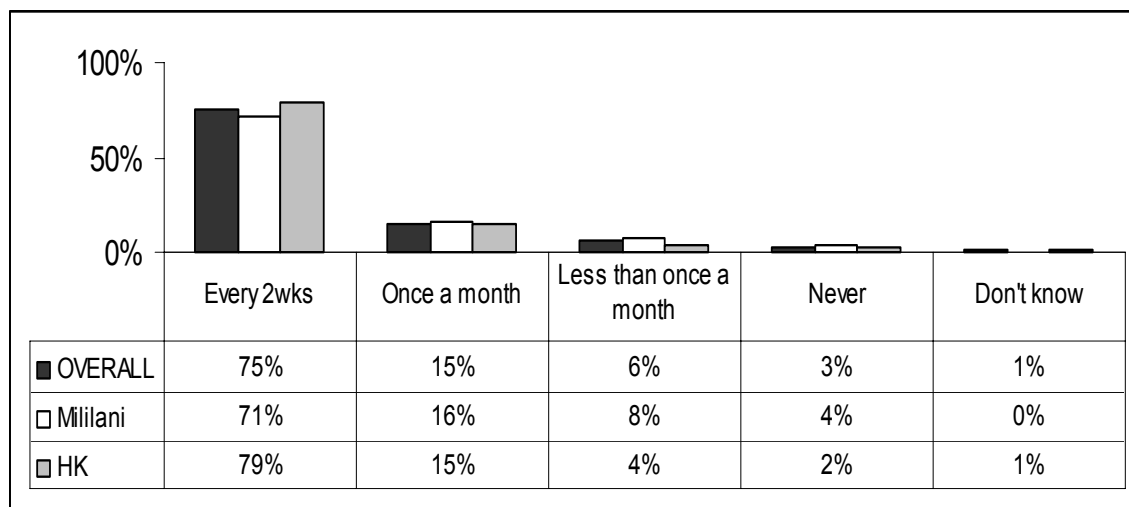
The objectives of this research are to:

- Measure respondents' awareness of the curbside recycling pilot program in their neighborhood
- Gain insight into respondents' recycling habits and reasons for recycling or not recycling
- Identify respondents' problems or issues with the curbside recycling program.
- Gain insight into respondents' receptivity towards the curbside recycling program and obtain feedback for future improvements of the program.

SUMMARY OF FINDINGS

BLUE BIN - RECYCLABLES

At the outset of this section of the research, respondents were asked to estimate how often they put out their blue bins for mixed recyclables.



The research shows three in four (75%) respondents put their blue recyclable bin out on the curb every two weeks for pickup. Of the remainder, 15% put out their blue bin once a month while less than 6% put their blue bins out fewer than once a month. Just 3% who are eligible never use their blue bins.

- When broken down by area we find Hawaii Kai residents slightly more likely to put their bins out on a more regular basis.
- The likelihood of putting out their blue bin every two weeks is higher among more affluent respondents. Among those residing in households with combined incomes in excess of \$100K/year, 82% put their blue bins out regularly every two weeks. By comparison, this number falls to a still respectable 70% among those residing in households with combined incomes below this amount.

Next, those respondents (N=775) who indicated in the previous section that they use their blue mixed-recyclable bin were asked what types of materials they put in it.

	OVERALL	Mililani	HK
Corrugated cardboard	88%	85%	90%
Newspaper	87%	84%	90%
Glass bottles and jars	70%	67%	72%
Plastic bottles	66%	67%	66%
Aluminum cans	33%	30%	36%
Magazines	20%	18%	22%
Cereal or tissue boxes	19%	19%	19%
Telephone books	14%	13%	15%
Plastic bags/ Plastic toys/ Polystyrene foam/ plastic tubs	10%	8%	11%
Glossy paper	8%	7%	8%
Drinking glasses/ ceramics/ window glass	5%	3%	6%

The top four items that are typically included in the blue recycling bins are corrugated cardboard, newspapers, glass bottles, jars and plastic bottles. Each of these items was mentioned by at least half the respondents as an item they typically put in their blue bins.

A third (33%) of the households polled put aluminum cans in their blue bins for pickup.

- The results do not differ significantly by region.

These same respondents (n=769) were then asked what, if any, other forms of recycling do they also participate in.

	OVERALL	Mililani	HK
Take bottles and cans to the HI5 Redemption Center	66%	72%	61%
School/ community drop-off bins	35%	34%	36%
Do not participate in other forms of recycling	17%	14%	20%
Fundraisers- Charity	4%	4%	3%
Other	3%	2%	5%
Don't know/ Refused	2%	2%	3%

Two-thirds (66%) of those polled also take bottles and cans to a HI5 Redemption Center. Thirty-five percent of this segment use school/community drop-off bins to get rid of their recyclables. Seventeen percent of those who currently use their blue recycling bins say this is the only form of recycling they participate in.

- Blue bin participants with larger household sizes are more likely to also take advantage of HI5 Redemption Centers. Among those residing in households with one or two individuals, 56% also take their bottles and cans to a HI5 Redemption Center. By comparison, this number increases to 72% among those residing in homes of three or more residents. Similarly, those in smaller households (22% only use curbside recycling) are more likely to acknowledge that they do not participate in outside recycling programs than are those residing in larger households (14% only use curbside recycling).
- Filipino (78%), Hawaiian (67%) and Japanese (68%) respondents who currently use their blue bins also participate in the HI5 program. This dual participation drops to 59% among Caucasian respondents.

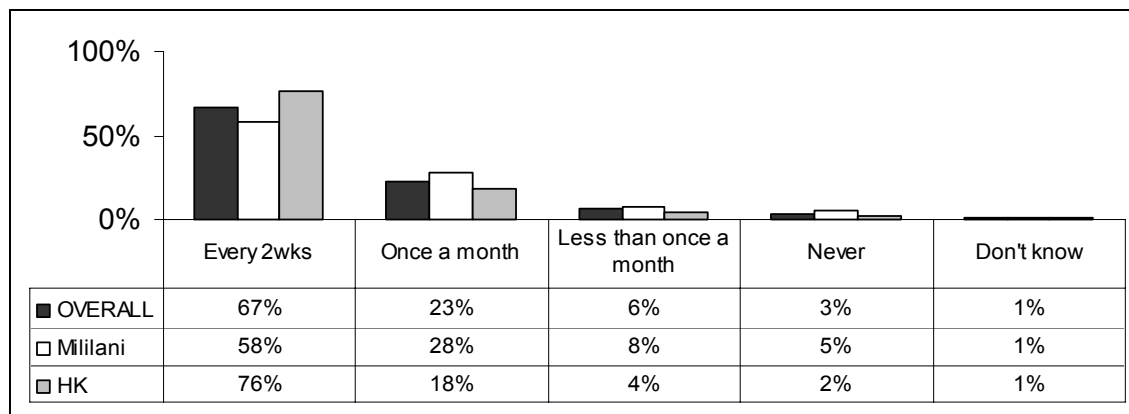
At the opposite end, those respondents (n=27) who stated they do not use their blue mixed-recyclables bin were then asked why this was.

	N=27
Prefer to take cans and bottles to the HI5 Redemption Centers	59%
Deposit recyclables at the school/community drop-off bins	26%
Too much trouble to store items	22%
Don't have these types of recyclables	15%
Other	11%

Among this small segment of the sample, over half (59%) say they do not participate because they prefer to use the HI5 Redemption Centers. Of the remainder, 26% deposit their recyclables at the white community drop-off bins while 22% feel it's simply too much trouble to store items to place in the blue bins. Fifteen percent believe they don't have these types of items to recycle.

GREEN BIN – GREENWASTE

At the outset of this section of the research, respondents were asked to estimate how often they put out their green bins.



Two-thirds (67%) of those polled regularly put out their green bins for pickup. Roughly one in four (23%) respondents put these bins out at least once a month while six percent put them out less frequently than this. Just 3% say they never but their green bins out.

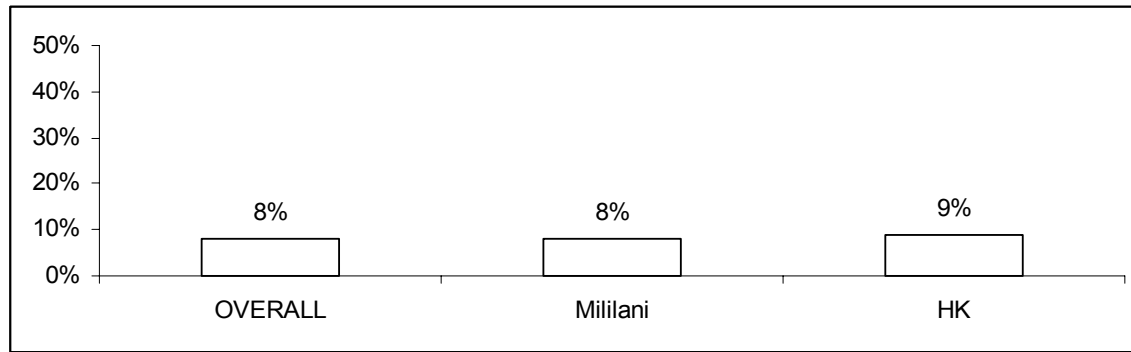
- Hawaii Kai (76%) respondents are more likely to regularly but their green bins out compared to their counterparts in Mililani (58% every two weeks).

Next, those 27 respondents from the previous section who say they never use their green bins were asked why this was.

	N=27
I do not have any/enough greenwaste	52%
I do backyard composting/ turn to mulch	22%
I have a yard service to dispose my greenwaste	19%
I haul my greenwaste to the City's Convenience Center	4%
I haul my greenwaste to a composting center	4%
I do not recycle my greenwaste	7%

Half (52%) of this segment does not use their green bins because they do not have greenwaste or they feel their yards do not generate enough greenwaste to make it worthwhile for them to participate. Twenty-two percent say they prefer to compost their own greenwaste. Nineteen percent have a yard service that cuts and then removes their greenwaste for them.

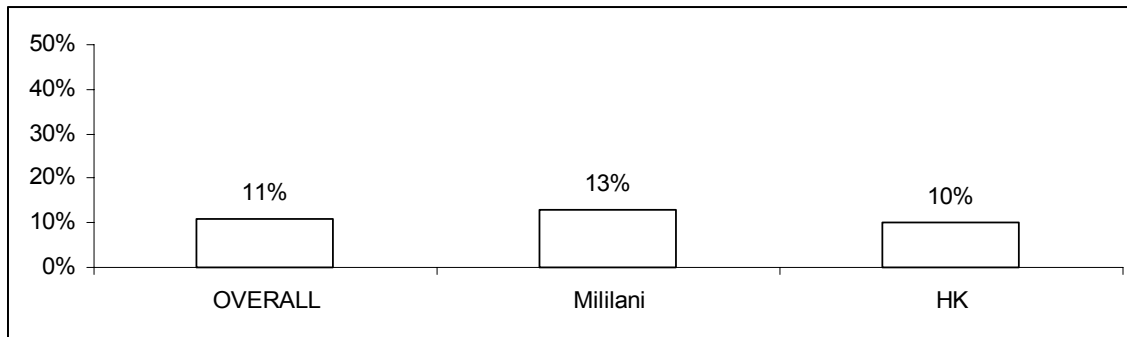
Each respondent was then asked if they have ever requested a second green bin to hold their household's greenwaste.



Overall, eight percent say they have requested a second green bin to help store their greenwaste.

GREY BIN – GARBAGE/ REFUSE

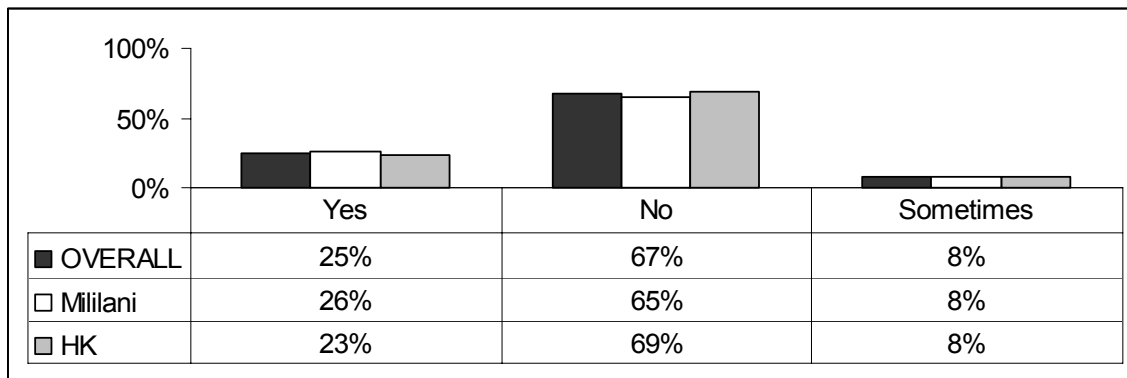
At the start of this section of the research respondents were asked if they have requested a second grey bin to hold their household's garbage.



The results show 11% of the households polled have requested a second grey bin to hold their garbage since the start of the curbside recycling program.

- Hawaiian (18%) and Filipino (17%) respondents were more likely to have requested a second grey bin than were their Japanese (10%) and Caucasian (8%) counterparts.

Next, each respondent was asked if the once per week garbage collection has caused any odor or vector issues such as insect or rodents for their household.



Overall, one in four (25%) households say the once a week garbage pickup has caused odor and vector problems since the start of the program. Another 8% say the new pickup schedule has caused these issues for them on a less frequent basis while for a majority (67%) this has not been an issue.

- More affluent households were more likely to have problems with odors and vectors as a result of the new pickup schedule. Among those residing in households earning in excess of \$100K/year, 29% say these are concerns. By comparison, this drops to 22% among those living in households earning below this amount.

In order to further probe this issue respondents were asked specifically to identify the issues they have been having as a result of the once a week grey bin pickup.

	OVERALL	Mililani	HK
No problems with once a week pickup	67%	66%	69%
Odor	18%	18%	19%
Vectors	2%	3%	2%
Both	11%	12%	10%
Don't know	1%	0%	1%

As was stated in the previous question a majority (67%) report no negative impact as a result of the new garbage pickup schedule. Of the remainder, 18% are having a problem with the odor the garbage now emits while just 2% profess to problems exclusively with insects and rodents. Eleven percent acknowledges the problem is a combination of both odor and vectors.

- More affluent respondents are more likely to complain about odors. Among those residing in households earning in excess of \$100K/year, 24% now have a problem with odor. By comparison, the percent who complain about odors among those living in households earning below this amount is 14%.

Next, research respondents with issues as were identified above were asked if it was a “manageable” one for their household.

	OVERALL	Mililani	HK
No problems with once a week pickup	67%	66%	69%
Manageable	21%	23%	18%
It's a problem	12%	10%	13%
Don't know	0%	1%	0%

Twelve percent of the households polled say odors and vectors caused by the once a week pickup is a real problem for them. Twenty-one percent say the issues noted above while inconvenient are manageable for their family. Again, a majority (67%) have had no problems as a result of the new pickup schedule.

MILILANI ONLY

In this section of the research Mililani residents (N=404) were asked about the optional second day refuse pickup option.

To begin this section of the research respondents were asked if they have purchased the second day refuse pickup for a fee of \$10.

	MILILANI
Yes, purchased 2 nd pickup for \$10	5%
Have not purchased	95%

Just 5% of the Mililani residents polled have purchased the optional second day pickup for a \$10 fee.

Next, those 20 Mililani residents who have purchased this additional service were asked why this was. The results are listed below.

	N=20
Too much garbage is being generated by my household	65%
Don't like garbage to sit around for a full week	35%
Feel it is unhealthy/ unsafe to have garbage sit for a full week	20%
To avoid the odor	10%
Just in case I may need it in the future/ hard to gauge garbage	5%

COMMUNITY PERCEPTIONS

At the start of this section of the research respondents were read three descriptive statements related to the new curbside recycling program and then asked which one best describes their own personal feelings.

	OVERALL	Mililani	HK
I like participating in the curbside recycling program and do not think I need the extra refuse pickup each week	79%	76%	82%
I like participating in the curbside recycling program but think I need the extra pickup each week at the \$10 per month charge	10%	13%	8%
I dislike participating in curbside recycling and prefer to put all my refuse in one bin	7%	6%	7%
Don't know	4%	5%	4%

A majority (79%) of those polled like participating in the curbside recycling program and feel the 2nd optional pickup is not necessary. Of the remainder, 10% like the program but feel the need for the 2nd optional trash pickup while just 7% dislike the new program.

- Female respondents have a slightly more favorable opinion towards curbside recycling than their male counterparts. One in ten (10%) of the men polled dislike curbside recycling. By comparison, the same is true among just 4% of the females polled.

Next, each household was asked to estimate how long it took them to adapt to the new curbside recycling program.

	OVERALL	Mililani	HK
Less than a month	70%	67%	73%
About a month	17%	18%	16%
About 2 months	6%	6%	5%
More than 2 months	2%	3%	1%
Still not sure how it works	4%	4%	4%

A majority (70%) of the respondents indicate it took them less than a month to understand the City's new curbside recycling program. Of the remainder, 17% estimate it took their family a month to adjust while for six percent the learning curve was two months. Two percent indicate it took more than two months to figure things out while 4% are still unsure how it works.

Next, research respondents were asked to rate how easy or difficult it is to sort through their recyclable materials. They were asked to quantify their perceptions using a four-point rating scale with it is a very easy task being assigned a value of four and it is very difficult or troublesome being assigned a value of one. The table below highlights the percent results as well as the mean or average score. The higher the mean score the easier the task of sorting recyclables is perceived as being.

	OVERALL	Mililani	HK
Very easy	61%	58%	63%
Somewhat easy	30%	32%	27%
Somewhat difficult or troublesome	7%	6%	8%
Very difficult or troublesome	1%	2%	1%
Don't know	1%	2%	1%
MEAN	3.5	3.5	3.5

Sixty-one percent of those polled find the process of sorting their recyclables to be a very easy task while another 30% describe it as being somewhat easy for them. At the opposite end, less than one in ten have some trouble doing this on a regular basis. These percent scores result in a mean average of 3.5 out of a possible 4.0.

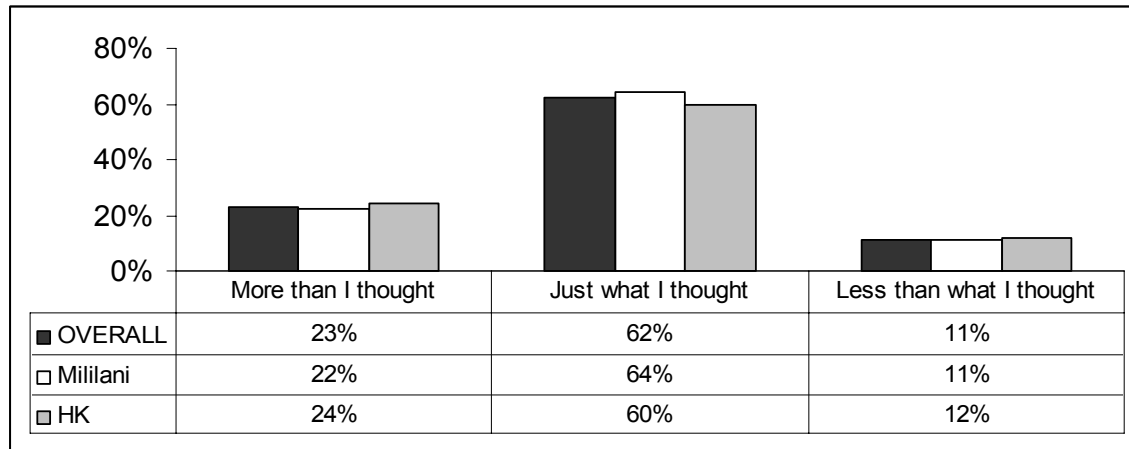
- Those in larger extended families are slightly less likely to describe the process of sorting through recyclables as being easy for them. Among those in households of three or more individuals, 58% describe the sorting as being very easy for them. By comparison, this number increases to 67% among those in households of one or two persons.

Each respondent was then asked what they found confusing or frustrating about the curbside recycling program. The top responses are listed in the table below.

	OVERALL	Mililani	HK
Nothing	51%	50%	51%
Confused/frustrated by pickup schedule	23%	25%	20%
Can't recycle certain materials	10%	10%	10%
Once a week refuse pickup	9%	8%	9%
Hassle to separate garbage	7%	6%	8%
\$10 fee for 2 nd trash pickup	6%	7%	5%

Half (51%) the respondents have no problems with the curbside recycling program. Of the remainder, one in four (23%) say a problem for them is remembering which bin to take out on alternating weeks. Ten percent say it's frustrating that certain items are not acceptable by the City. No other single response garnered more than 10% of the overall sample.

At the conclusion of this section of the research respondents were asked about the amount of recyclables they are discovering as a result of this program.

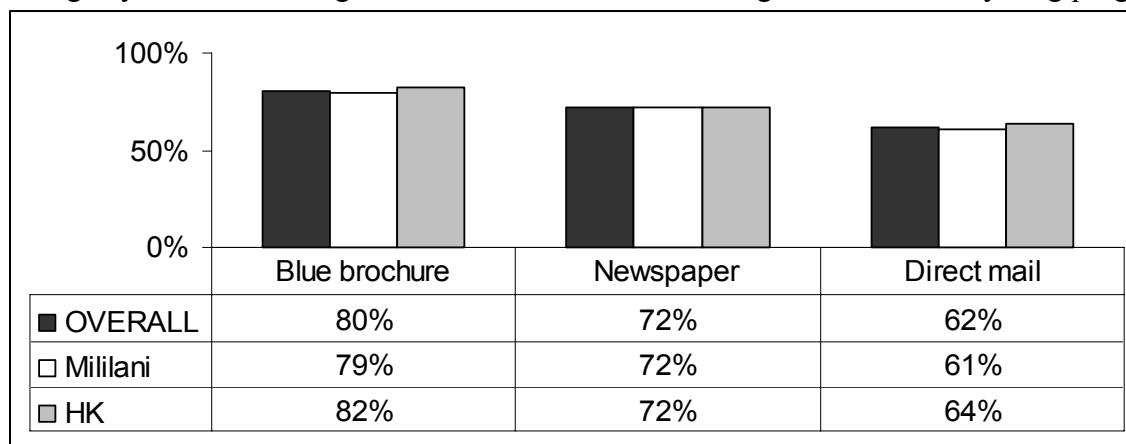


Overall, one in four (23%) respondents says they are discovering that the amount of recyclable materials their household produces is more than what they thought. A majority (62%) agree the amount is what they would have estimated while 11% are finding less recyclable materials than they thought they would have.

- Female (28% more) respondents are more likely to say they have more recyclable materials than they thought they would have as compared to their male (19%) counterparts.
- Less affluent households (below \$100K/year) are more likely to acknowledge having more recyclable materials (30%) than they thought they would have than are their more wealthy (\$100K+) counterparts (20% more than I thought).

EDUCATIONAL MATERIALS

At the outset of this section of the research respondents were asked specifically if they recall seeing any of the following educational materials describing the curbside recycling program.



The educational material with the highest aided awareness was the blue brochure, recognized by 80% of those polled. Ranking a close second were newspaper articles with recall among 72%. Direct mail was cited by 62% of those polled.

Those respondents (n=643) who recalled receiving the blue brochure attached to their blue bin which included a calendar/sticker were asked if they are using these items.

	OVERALL	Mililani	HK
Yes, using the stickers and calendar	33%	37%	29%
Am not using them	46%	41%	51%
Don't know	1%	1%	1%
Don't recall receiving brochure	20%	21%	18%

Overall, a third (33%) of those polled is currently using the stickers and calendar provided with the blue brochure. Nearly half (46%) received the stickers and calendar but are not using them. One in five (20%) do not recall receiving these items.

- The results show Mililani residents more likely to be taking advantage of the information provided by the stickers and calendars than are their Hawaii Kai counterparts.

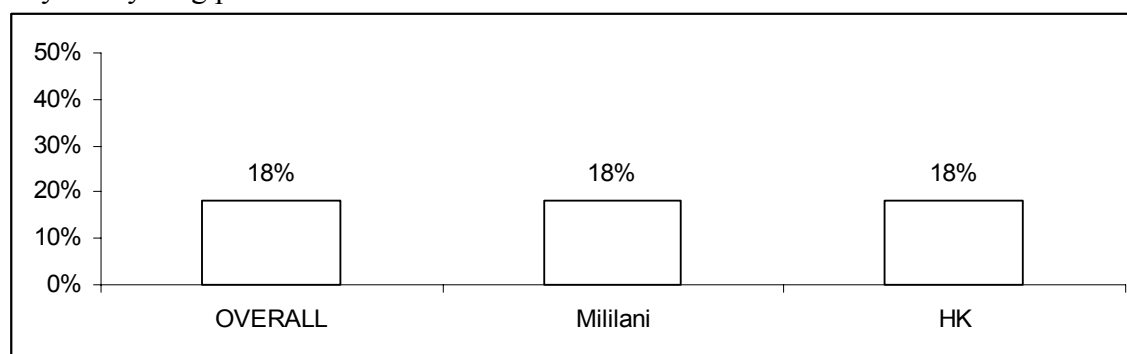
At the conclusion of this section of the research respondents were asked to evaluate the effectiveness of the educational materials that they were exposed to.

	OVERALL	Mililani	HK
Very effective/ useful	49%	47%	51%
Somewhat effective/ useful	38%	38%	38%
Not effective or useful at all	5%	6%	5%
Don't know/ Refused	7%	8%	6%

Half (49%) find the educational materials the City has provided to be very effective and useful. Thirty-eight percent would describe them as somewhat effective while just 5% found them to be not effect at all.

CITY'S RECYCLING PHONE NUMBER

At the start of this section of the research respondents were asked if they have ever called the City's recycling phone number for assistance.



Eighteen percent of those polled have called the City's recycling phone number seeking information.

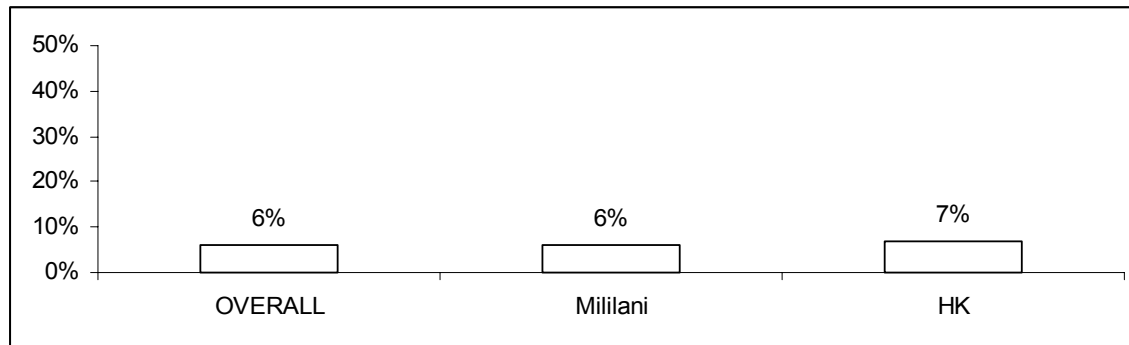
Next, those respondents (n=145) who have called the City's recycling phone number were asked to rate their "helpfulness."

	OVERALL	Mililani	HK
Very helpful	75%	80%	70%
Somewhat helpful	17%	14%	21%
Not helpful at all	8%	7%	8%

Those who have dealt with the City by phone are pleased with the results. Seventy-five percent who have used the service found them to be very helpful. Of the remainder, 17% describe them as somewhat helpful while just 8% were dissatisfied with their experience.

COMMUNITY MEETINGS

Each respondent was asked if in the last year they had attended a meeting concerning recycling or solid waste management for the City and County of Honolulu.



Six percent of those polled say they have attended a community meeting related to recycling or solid waste management sponsored by the City & County of Honolulu.

H-POWER

Each respondent was asked if they were aware that materials from your gray bin go to H-Power to provide electricity.

	OVERALL	Mililani	HK
Yes, aware grey bin garbage goes to H-Power	65%	68%	62%
Not aware	33%	29%	36%
Refused	2%	2%	2%

Roughly two-thirds of those polled were aware that garbage from the gray bins are used by the H-Power plant to create electricity.

OPALA.ORG

Research respondents were asked at the start of this section of the research about their familiarity with the opala.org website.

VISITED OPALA.ORG	PRIMARY PURPOSE	EFFECTIVENESS
33%	47% Check bin pickup sched. 28% Info recycling issues 27% Info bulky item pickup 7% General info on topic	61% Very effective/useful 34% Somewhat effective 2% Not effective 3% Don't know

Overall a third (33%) of those polled have visited the website opala.org.

- Mililani (37%) residents are more likely to have visited opala.org than are their counterparts in Hawaii Kai (28%).
- Male respondents (37%) are more likely to have visited this website than are their female (29%) counterparts.
- The likelihood of visiting opala.org is higher among more affluent respondents. Among those residing in households earning in excess of \$100K/year, 42% have visited this site. By comparison, this number declines to 28% among those residing in households earning below this amount.

The primary reason for visiting opala.org was to verify the pickup schedule for the different colored bins (47%). Twenty-eight percent were seeking out information on different recycling issues while 27% were looking for information related to the bulky-item pickup program.

The results show that those who do visit the site are generally pleased with it. Sixty-one percent who have visited this website describe it as being very effective and useful. Another 34% believe it is somewhat effective while just 2% say it was not effective for them.

SUGGESTIONS/ COMMENTS

At the conclusion of the research respondents were given an opportunity to voice any concerns or comments they may have had regarding the pilot recycling program in their neighborhood. A sampling of some the responses received are listed below.

"Easier than I thought it would be"

"It's good what the city is doing"

"During holidays, I would recommend twice a week pick up"

"I'd like to recycle more different kinds of materials"

"I'd like to have garbage collection twice a week without the \$10 charge. Instructions for separating refuse are difficult when it comes to separating paper from glossy paper. What about bottle caps?"

"I am very upset that we lost our 2nd day garbage pick-up-we have a large family with a lot of rubbish that is not recyclable-so it stinks around here & people are illegally dumping garbage at school-re-evaluate"

"Confused on what exactly what goes in the bin"

"Confused with what bin are collected on what days, why not use even or odd days of collection. More than once a week pick up for gray bin"

"Find more creative ways to explain what can be recycled, concern about placing glass in the bin without breakage and/or worrying about shards"

"Good idea needs to continue don't give in and need to refine it"

"Gray bins need to be picked up more often without cost!"

"Green bin fills up too quick"

"He likes the program but thinks it could go farther not just curbside but have more bins everywhere like at parks"

"I'm glad we have it, before I was recycling on my own-taking it to the center-this is easier"

"I am disappointed with not recycling cereal boxes of paper products. The city is only interested in money making recyclable"

"I have enough room for my bins but my neighbors complain about there is not enough room for the bins"

"...some of the people in my area ... they are not separating it correctly come up with a better system for those who don't understand"

“I need to have the garbage(gray)picked up 2x wk because I have dog waste & people have baby disposable diapers that smell & I suggest the pick-up schedule be 1stwk-blue 2nd&3rdwk-garbage-4thwk-green-easy&good”

“I still wish for 2 pickups for garbage”

“I think it is silly/bottle bill charges 5cents/then the city just gets it/we need 2xs wkly pickup”

“I think it's about time to see this and I would like to see this island-wide”

“I think this program is working very well and reducing the amount of things that people put in a gray bin”

“I was pleasantly surprised how much it reduced my garbage”

PROFILE OF RESPONDENTS

	<i>OVERALL</i>
PRIMARY RESIDENCE	94%
Own	5%
Rent	
HOUSEHOLD SIZE	3.3 Persons
<i>YEARS IN HAWAII</i>	6%
Less than 10 years	7%
10 but less than 20	30%
20 years or more	54%
Lifetime	
<i>EDUCATION</i>	14%
H.S./ GED	21%
Some College	7%
Trade/ JC/ Military	34%
College Degree	20%
Post-Graduate studies	
<i>AGE</i>	5%
18-34	37%
35-54	53%
55+	56.0
MEAN	
<i>AGE/TOP RECYCLER</i>	54.3
<i>ETHNICITY</i>	24%
Caucasian	37%
Japanese	12%
Hawaiian/ Part	7%
Filipino	
<i>HOUSEHOLD INC</i>	1%
Less than \$25K	6%
\$25K-\$50K	13%
\$50K-\$75K	14%
\$75K-\$100K	34%
\$100K+	
<i>GENDER</i>	49%
Male	51%
Female	

Exhibit J
Participant Survey Verbatim (Q24)

Q.24 Is there anything else you'd like to tell us about the pilot recycling program in your area? (800 respondents – 400 Hawaii Kai and 400 Mililani)

It's good what the city is doing
The barrels are left on the curb all the time/houses do not have enough room for barrels/bad for aesthetics/limited space more so in other neighborhoods need park recycling/extra bins
A bigger blue bin and will call for another green can. Neighbors don't do the recycling program.
Another day of pick up for gray bin
Are doing fine
Are you kidding?
Being able to have more items that can be recycled...
Better the old way have to freeze the garbage. Washing gray bin is a waste of time
Bin is too heavy. Too much bins to hold
Blue bin is smaller then gray bin would like blue bin to be bigger
Blue bin larger or pick up more
Both he and his wife wished that they didn't do away w/ twice a week refuse p-up and instead charged the fee if you want to recycle
Bring extra pick up without \$10 charge
Bulk pick-up within 1-2 weeks, send printed materials with instructions for enforcement.
Can we put more materials in blue bin
Christmas was a bad time to start with so much holiday trash
City no longer pick up every other Thursday, bins in my neighborhood is annoying and smelling doggie bags. Some people are not on the program.
Confused on what exactly what goes in the bin, the size, all plastic
Confused with what bin are collected on what days, why not use even or odd days of collection.
More than once a week pick up for gray bin.
Continue recycling
Continue recycling program but like to have 2nd rubbish pick up at no charge.
Customer service is not available when needed
Didn't receive the brochure if possible I would like one
Do away w/ the HI5 redemption so he can just throw cans and bottles in blue bin
Do away with the Hi5
Do away with the HI5 redemption center and do not charge 5 cent deposit
Do not know when they pick-up bulky items
Do tin cans go with the recyclables?
Doing a great job, keep it up!
Don't want to pay the 10.00 fee for an extra day pick up.
Don't stop it
During holidays, I would recommend twice a week pick up.
Eager to see it spread throughout the island.
Easier than I thought it would be.
Everybody needs to do it
Everything cool
Everything is fine
Everything is working pretty good
Everything is all good

Excellent program, at times there are more flies
 More pick up days with the gray bin
 Expand it, its overdue
 Extra pick up but no charge
 Find a way to recycle magazines and tin cans
 Find more creative ways to explain what can be recycled, concern about placing glass in the bin without breakage and/or worrying about shards
 Free second pick
 First wasn't for it but now it's perfect
 Get rid of HI-5 program
 Go back to original
 Go back to where they were
 Going very nice keep it up look to get the whole island to participate
 Good I don't have to go to school to recycle.
 Good idea
 Good idea even if it gets confusing Hawaii is a must to recycle
 Good idea needs to continue don't give in and need to refine it
 Good idea support
 Good program
 Good stuff
 Good they are doing it here, I was used to doing it in California
 Gray bins need to be picked up more often without cost!
 Great idea; keep up the good work
 Great program
 Great program keep it
 Great, no it's good, great idea keep it up
 Green bin fills up too quick
 Green bin overflow would like to use gray bin
 Green bin pick up more often and is there an additional charge
 Green bin too many rules, example cannot use plastic bags
 Green bins once a week also
 Had a difficult time trying to find out how to get a second green bin
 Happy we are doing it
 Happy with program
 Happy with the whole program wishing the whole island would do it
 Have one day for recycling; which is easier to remember-should be allowed to put excess of one bin into another bin on a given day
 Very satisfied
 Believes in recycling and preserving our environment, we should study the S. Korea Mandatory recycling program. It's a tremendous success. We should consider mandatory recycling on everything, worldwide.
 He can tell what day to put out what bin according to neighbor's bins
 He doesn't really like the program but has no choice
 He gets his info off the internet. He thinks its a good program
 He likes it and thinks everyone should be doing it
 He likes the program
 He likes the program but thinks it could go farther not just curbside but have more bins everywhere like at parks
 He thinks its working pretty good and we did it a long time ago then we wouldn't have landfill problems on this island

Her neighborhood needs more bins
 Hope it continues
 Hope it continues, like the recycling program.
 Hope that it will continue like what the mayor is doing
 Hopes that it continues it's a good program
 I'd like to have garbage collection twice a week without the \$10 charge. Instructions for separating refuse are difficult when it comes to separating paper from glossy paper. What about bottle caps?
 I'd like to recycle more different kinds of materials
 I'm fine with one bin and feel the city and county should provide those who want the three bins instead assume I need three bins and give me no choice to house their bins see how the rest of the island participates!
 I'm glad that it's finally here and recommend taking it state wide...
 I'm glad we have it, before I was recycling on my own-taking it to the center-this is easier & I believe in recycling
 I am disappointed with not recycling cereal boxes of paper products. The city is only interested in money making recyclable.
 I am for recycling /long overdue /want to see it expanded. Support this mayor /should have done this 15 yrs. ago
 I am not a recycler and it's a big deal.
 I am really happy with the program
 I am satisfied with the bins.
 I am very upset that we lost our 2nd day garbage pick-up-we have a large family with a lot of rubbish that is not recyclable-so it stinks around here & people are illegally dumping garbage at school-re-evaluate
 I'd be glad when they open up to the rest of island
 I believe that this is a good thing and should make more people aware of it and giving them more information about recycling.
 I do like it very much, but I don't like the 5 cents collection at the store.
 I don't think so/feel sorry for smaller homes with no place to put bins
 I don't have any complaints, just positives
 I wish they would take tin cans. Please recycle plastic bags/it is working fine, though
 I feel it was a good idea and I'm very happy.
 I give my recyclable to my friend as a donation. Don't use at all.
 I guess its working
 I hardly use the bins
 I have enough room for my bins but my neighbors complain about there is not enough room for the bins
 I have no comment but it is a good idea
 I hope it's working well. Hopefully it's great for other communities as well.
 I hope it continues.
 I hope that more people take out their blue and green bins. Not all my neighbors are recycling.
 I just don't know what bin goes out when.
 I just follow the neighbors when to put the bins out
 I just hope that some of the people in my area do the same thing they are not separating it correctly come up with a better system for those who don't understand
 I just hope they continue the program
 I like it and wish it had started sooner. The rest of the island needs to be on program
 I like it.
 I need a second bin for green waste. Everything else is okay.

I need to have the garbage(gray)picked up 2x week because I have dog waste and people have baby disposable diapers that smell and I suggest the pickup schedule be first week blue, second and third week garbage, fourth week green—easy and good
 I prefer the twice pickup but not for extra cost-- the main pickup
 I recommend that the gray garbage bins will be picked up twice a week.
 I still wish for two pickups for garbage
 I support it. I think it's an excellent program.
 I think everyone in the state should do the recycling
 I think it's a good thing.
 I think it's about time to see this and I would like to see this island-wide
 I think it's great for the state itself, we could be self reliant
 I think it's pretty good.
 I think it's terrific especially the green bin. It's so neat. The cats and dogs don't get it.
 I think it's working out pretty smoothly and we have gotten used to the days and so forth
 I think it doesn't serve everyone's needs and it should be re examined...
 I think it is a good program
 I think it is silly/bottle bill charges 5 cents/then the city just gets it/we need 2xs wkly pickup.
 I think it is very wise and I hope it expands to the whole island
 I think it is working/it's good
 I think it should be continued all over
 I think it should be island wide.
 I think it should continue
 I think it's a great idea
 I think it's as good as it can be
 I think it's good
 I think it's great
 I think it's great. Hope everyone buys into it...
 I think it's pretty good.
 I think that I like it and I don't think its big problem
 I think that it's good for the city and that it is a good program
 I think that it's working just fine
 I think the \$10.00 charge is a waste because sometimes they come for nothing
 I think the city should do this statewide
 I think the HI-5 thing /law should be repealed /but I will not give to the city
 I think the program is a great idea.
 I think the program is excellent and I enjoy being able to do it from my home
 I think this program is great. I see that the city is trying to move this program into other neighborhoods and that's good.
 I think this program is working very well and reducing the amount of things that people put in a gray bin.
 I think we live in a gated community.
 I think we need the second day pick up for free
 I think we should go back to the old system because it is a waste of money & tax dollars for something we were doing on our own
 I think what happens sometimes when we get a lot of corrugated cardboard I end up taking it down the street to the white bin. I wish we could recycle in blue bins aluminum cans instead of HI-5 redemption center.
 I think it's a good idea and keep on doing it and more of it
 I thought all of the information was very helpful
 I understand why the mayor they push for solar panels I would like to see fan on your roof

I want another gray bin with no charge.
 I want more scheduled on regular rubbish bins without charge
 I want my rubbish picked up twice a week because it stinks and it doesn't fit.
 I was pleasantly surprised how much it reduced my garbage
 I wish the materials were written in other language, English is not my first language-can only read simple things
 I wish they could recycle more items.
 I wish they could take out the green bins because we have branches in the yard
 I wish they would catch up with technology in Japan sewage could do electricity.
 I wish they would do a second pick general waste one pick isn't good enough that's where the odor and insects or rodents come I shouldn't pay for the second pick the city should provide the second pick up free
 I wish they would do away with the hi5 so we can just put it all in 1 bin
 I wish we could choose the bin size
 I wonder if I should make more rubbish so that we get more electricity
 I wonder what trash is going h [power and which ones go to the dump.
 I would like the second pick without the ten dollars,
 I would like them to continue the 2nd pickup for the service charge. I paid for the 2nd pick up and they might cancel and they said I might not get a refund it's a hassle to go to city hall it should be by mail
 I would like to have pick-up twice a week; better than 2 bins in 1 day
 I would like to have the second day pickup at no charge to us....but we have private maintenance in our area....
 I would like to let you guys know that my family is from Japan and Taiwan and they do more recycling then we do
 I would prefer to have 2x wk gray bin pick-up without the extra \$10.00 fee & I take my own glass bottles & cans to get the 5 cent re-imbursement-wish I could get that w/ home pick-up if sep bin
 I would to see more items recyclable. Would like to bring the 2x a week pick up but not have to pay \$10 a month.
 Don't wanna have to pay service for pickup
 If they're going to do this, they should not collect the HI-5
 If you are going to do an island-wide recycling program then they should the HI-5 redemption centers.
 If you had a public service information on the TV, for 15 or 30 minutes, just to tell us information, or on the cable station
 Love it, save us a lot of time
 I'm enjoying it. It's okay. Garbage people are very helpful.
 I'm glad they are doing it
 I'm glad we have it in place
 I'm very dissatisfied with it. They should make the pickups in more days. we should not pay \$10 for extra pick up. Having 3 separate bins is bad.
 Improve on more pickup ok to use more expansion on the list to include tins and foils
 Improve recycle on tin can
 inconvenient -- creates lots of spoilage -- too much wrapping up with papers put it in the plastic bag and then throw away -- not very happy with program.
 Information for the blue bin needs to be more available.
 It's been great I wish I could do more
 It's fine for me working out real well.
 It's going pretty well

It's good-no problem
It's ok but would want 2nd pick up without \$10 a month.
Its ok, we read all about it.
Its okay
Its okay just needs some getting used to.
It's sufficient.
It should roll it out island-wide
It's good
It is a good thing/necessary for the environment/need to practice
It is confusing/not enough bins/confusing pick-up times
It is good except the this survey, it's too long
It is great and be island wide
It is overdue-about time
It is working well
It's perfect, it works for me
It should be a program for the whole island
It should be done through out island
It should be extended to as many communities as possible, it's very easy. They need to have good roads and accessible to the bin collectors.
It sucks and he requested a 2nd gray bin over a month ago but no one has responded to him
It sucks insufficient pick up 4 gray bin. I feel it's unfair to pay 10 dollars more 4 extra pickup.
Feel it's very unsanitary. You won't give me a 2nd bin but get a mass transit in place
It takes up space 3 bins is a lot and it's a lot of space to give up
It was a good idea
It works but no room for extra bins they are too large and not picked up enough
It works for my household
It works for us
It would nice to a way dispose of batteries.
It's a good idea
It's a good program
It's a good thing but just don't like the once a week refuse p-up
It's a good thing it gets a good point
It's alright
It's alright
It's alright
It's been working
It's better than I thought it would be
It's finally here and worth it
It's good
It's good because we are running out of room for waste on this island
Its good but they want twice a week p-up for the gray bin w/out paying the fee
It's good to have
It's great
Its great and she hopes it continues at least we're making progress
It's just a little confusing about the types of materials you can recycle but overall it's a good program
Its pretty good, regular bulk pick up it takes longer for them to come around.
It's really good
It's very good and I like it
It's very convenient

It's very easy very simple we should all be doing it the whole state
 Its working
 It's working out pretty good
 Junk it.
 Just wanted to know about when is the bulk pick up, bin collectors should be more attentive with bins and not leave cover open when bad weather
 Just hope they keep it
 Just keep it up and i think its a good idea everybody should do there part
 Just that its a good thing
 Just that its long over due[p]it a good idea
 Just that she hopes it will turn out to be a regular thing
 Just that the blue bin is to big for items and also would rather have more pick up for grn bin just the pick up
 Keep it up
 Keep it up I think it's a very good thing towards our aina
 Keep up all recycling, it works fine.
 Like it a lot
 Like it a lot
 Like it very much and would like it to continue through out Honolulu
 Like the program
 Like to know more about paper accepted/plastics are a real problem to sort
 Like to see it take more recyclable items
 Like to see more thing s to recycle like tin cans
 Long overdue
 Long overdue
 Love it and should also be continued through out the whole island
 Love to have the whole island go green
 Lower the cost to \$5 a month instead of \$10 a month for 2nd day refuses p-up. Also is this program going to spread to other areas did they do a study to find out if this is cost effective?
 Make it more clearly as to what is recyclable
 Making us more aware of what is recyclable. Prior to the program, things are being put to better use instead of throwing them all in one bin and wasting possible energy.
 Male likes it and he should not be paying an extra \$10 for a 2nd pick up
 Male stated he has nothing to say but will cancel the 10 fee
 More adding stuff for the blue bin
 More green refuse pick up.
 More info, the cups of plastic bottles is not recyclables
 More information on triangles for the plastic 1, 2, 3, what they represent
 More items to be recyclables, two times pick up without any more charges
 More pick up and expand the recycle list for glass
 More pick up free
 My only complaint is I need the extra day for refuse.
 It's good for Hawaii more people participating
 Need a second day to pick up for free
 Need a second pickup but don't like the ten dollars
 Need information what can go into the bins what exactly, free second pick up but I like it.
 Need information what can the blue bin, I didn't get information before
 Need more expansion recycle metal cans?
 Need more news articles/more reinforcement/we seem to understand now the paper products are confusing/whether color or glossy. I think it is working fine. I wouldn't change it

Need more than one-day pickup
 Need new mayor
 Need the whole island go green
 Need to improve on tin
 Needs to let us put glossy papers also!
 Neighbors putting out bins in different days...people seem to still be confusing.
 No -- I don't think they should do the second pickup.
 No but I think that this is a really good program and should be able to recycle a lot more different things...
 No I'm glad they have this going.
 No I think it's rolling along just fine. Satisfied
 No I think it is a great program. I think the townhouses/condos should participate
 No I think it's a good idea
 No I think it's very good
 No I think it's very good. It's excellent.
 No I think its working out ok
 No ideas at this time he thinks it's a very good program
 No it's doing alright thank you!!
 No it's good enough for now and sees that they are extending it out to other areas.
 No it's ok and it helps.
 No it's ok.
 No it very good
 No it's alright
 No it's going to be fun for the other areas[p] I don't have any problems in my area
 No it's going well
 No it's good so far
 No it's good
 No not really. It would be an added plus if the city would add indoor recycling bins in the household. That way more people would recycle more. Because we only have recycling bins for the outside.
 No only the days to remember
 No satisfied with the program
 No the recycling program is okay
 No their very satisfied with it
 No we bought our house /we need a new one
 No we don't say anything
 No, I don't have anything
 No, I think it's excellent!!
 no, I think it's working out really well for me due to I have 2 bins so I make it easier to get all the rubbish I need sorted out before the pick it up.
 No, it's all good.
 No, it seems to be going fine for us
 No, not at this time.
 No, everything is alright for now I just want them to go back to the old ways
 No, great program
 No. we're very happy with it.
 No. I think it's a good program
 No. I think its going fine
 None good to recycle
 Nope I'm very with it and wish it was more spread widely with everyone else to do

Nope. Like to see it continue
 Not being charged for HI-5 and providing a bin
 Not enough room to place the 3 bins -- so better to have one bin
 Not happy with program and still have to convince rubbish disposal
 Not much but I'm pretty much satisfied w/their program.
 not necessary every week but a nice compromise would be to have 2x week pickup just 1x
 month to get rid of extra garbage pile-up especially if have party or near holidays
 Not really just that they could have the green and the blue on the same day
 Not really. Before we did it as guinea pigs??? Got the green one and then the blue one helped for
 one at a time/gradual process
 Not sure if can put fruit f/ trees in green bin
 Not to collect more money for refuse p/u
 Nothing to say convenient for community
 Notice I have less rubbish good program
 Ok with me
 only I like to see it expended like cereal boxes and Kleenex and more plastics other plastics to
 see where they go to.
 Only issue is to decide where to store our 3 bins.
 Only request that they pick up gray bin more then once a week w/o charge
 Our area tried it before. it was ok . we are in the habit
 Our Christmas tree we had to cut it up in order for them to pick it up
 Our family we learn use the basically the gray
 Our gray bin is cracked
 Pick up collection for once a week is enough
 Please go green island
 Programs should be more island-wide not starting only in Mililani
 Provide more info
 Push for more people using the green waste compose pile
 Really bugs me is my neighbors keep the 3 bins all the time, very cumbersome. Having three big
 cans is an eyesore.
 Recycle more thing other plastic, paper and cardboards...
 Recycle tin cans and Styrofoam
 Recycling is good but I don't like once a week collection but I don't want to pay \$10.
 Recycling program is a good thing to do. I can see my neighbors seem confused with what to do.
 Recycling program is good
 Redesign green bin to hold waste/messes up neighborhood/I have ulu tree only one around /its
 leaves blow several blocks from bin. If the drivers could go slower/maybe not so much mess.
 Ridiculous
 Refuse department is the best!
 Reminders on what types of recyclable go in each bin
 Request a 2 bin but was turned down the request poor job on survey
 Request an extra blue bin
 Requesting for another gray bin
 Right thing to do, it's inconvenient but good overall.
 Running nice and smooth
 Satisfied
 Said it all
 Satisfied
 Satisfied
 Satisfied with what the city is trying to do

Second day pickup should free! Use another community also!
Seems to be working out pretty well
Seems to be working pretty well, my neighbors are participating in the program. The only concern is gray bin not being enough. We could use another mid week pick-up. It was nice to have bi-weekly pick-up.
Share it with Molokai
She had to find out about the program her self will to pay for the 2 day pick up
She hasn't had any difficulties
She just wishes the gray bin would be picked up twice a week instead of once a week w/ out the fee. They like the blue bin program
She likes the program its good
She would rather have twice a week refuse p-up and once a month blue bin p-up. blue bin wheel assembly is not as good as the gray and green.
She's glad that we have it
Should be statewide
should educate people more or remind them of what can be recycled-I see the wrong stuff in the wrong bins & the green bin is too small f/ palm fronds & be able to close lid so need 1xwk pick-up & gray bin also
Should make it city wide and should have been done a long time ago
So far I am satisfied
So far so good
Some rivers are very rough, the bins are just dropped and they break.
Sometimes it takes too long for green waste pick-up/sorting out the cans is a problem. Some handicap makes it hard. Need more than once a wk for refuse/sometimes go out to dump myself?
Start back on twice a week pickup with payment
Statewide for recycling
Stickers are very good idea. People are very aware of the recycling and it would be good to do island wide.
Still have a lot to learn
Still not using blue bin/taking all to HI-5
Styrofoam needs to be recycled
Thank you for doing it's the right thing to do
That I like the recycling program.
That Mufi is the best for this program
That they should have the option to get the bins I need and not others. Pick up more than once per week. More pickup of green recyclable
The 3 bins take up a lot of space.
The best since the slice bread.
The blue bin is very cheaply made and it doesn't hold to up to what it should and also she has room for the three bins on the curb but some neighbors don't
The blue bins are kind of cheap the wheels don't turn well
The bulky pick up and sometimes people don't pay attention on the pick and then the things get left out. But other then that it's fine
The flies and the rats if the bins get open
The green and blue it's hard to remember to pay for the sticker inconvenient. Wanted to print the stickers through the internet but the colors I seen was too close hard to tell which was blue and green.
The green bins, for the people who have very long drive ways, getting the bin down every other week, it's very heavy. It's very difficult for elderly people. I can barely move the can because it weighs a lot.

The gray bin picked up twice a week with no charge
 The man works for the coast guard he was asking what about the big dumpster what and when they will start doing it.
 The odor is bad.
 The once a week gray bin not enough
 The only that he doesn't like is that too many people just leave their bins on the curb all the time
 The only thing is the odor
 The people still need some kind of education on recycling and we all have to cooperate together because our landfills is getting to much...
 The pick up for gray bin should be more than once a week
 The schedule should be publicized more/hard to remember all of it /not explained that only way to know is on-line put it in the newspaper
 The stickers are not helpful/my neighborhood is conscientious about sorting/wonder how other communities will do
 The system is working; they have to adjustments during holidays.
 The trucks destroy the bins/please check on them
 The whole island should be involved
 Their household likes the program good to learn how to recycle
 There should be more pick-ups on green bin than the blue. Maybe 3 xs a month for the green, gray is fine, and blue bin can be 1x a month.
 There should be two refuge pick ups without a service charge of 10 dollars.
 They gave it to me
 They should expand it statewide-good program
 They should have more recycling for plastics different
 They should make the blue bin bigger
 They should recycle magazine
 They should recycle more things
 They should've offered us the second day of garbage pick up instead of taking it away from us...
 Think everyone should participate
 Think it is helpful
 Think it's great
 Think they should make it through the whole island
 This program has helped a lot its fine
 This recycling program is ridiculous. Once a week pick up for the grey bin is not enough. I do not generate enough recyclables to put the blue or green bin out every other week. I don't feel I should have to pay
 This should spread all around island
 To have two regular pickup with out an extra cost
 To keep it going, don't stop.
 To me it's working out fine. I haven't heard any complains in where I live.
 Too many cans it takes up too much room
 Uh no.
 uhhh he would rather the state get rid of the hi 5 tax and just let the consumer recycle on their own
 um no.
 Very effective, I like it
 Very good
 Very good
 Very good
 Very good

Very happy
Very happy about recycling
Very satisfied
Very satisfied
Want it done statewide.
Wants a second bin, does not want to pay anything. Pals send me the printed material with the blue bin, nothing was received.
Wants an extra pick up day but doesn't feel she should be charged the \$10
We'd like to recycle all plastics
We're glad it's finally expanding. We need to do it island wide
We are very happy with it.
We are very pleased with this program
We cannot understand why we could recycle the bottles and not get my money back. It's not fair.
And it's not fair for \$10 pick up.
We like it-easy-we used to take our recycling to the center
We like it
We like the program
We love it
We need the city give more info about progress of recycling/they have gone from 8 pickups to 3/i like having recycling!! Are people really sorting/being checked/more public service announcements needed?
We still have some confusion about materials in blue bin.
We want some more instruction and easy to understand.
What I really enjoy is we are recycling everything besides the magazines. It's great!
What to do with the plastic bags
When we recycle we are donating all those items back to the city. I feel I should not pay the extra fee for pick up only that the recycling is worth way more than ten dollars.
Why do some neighborhoods have to pay for the seconds bin while some get it free?
Why is it only a pilot thing again, if you're going to do it just do it don't make it a pilot thing. If you're gonna do something do it right from the start
Why so slow should have it all over the island, and blue stickers are too small cant tell the different
Wish it wasn't so time consuming
Wish they would take all the papers, mag. glossy papers
Wondering why system not in use are
Working in our community
Working well
Working well with family, everybody shares the recycling.
Would like second day pickup
Would like the glossy papers to be recycling also
Would like them to take the milk cartons
Would like to have free 2nd day pick up without paying \$10.
Would like to keep recycling program
Would like to recycling more stuff
Would like those continued and more things to be recycle
Would rather go back to 2xs a wk with one can/not separate why should I give the recycle money to the city.
Would want extra pick up but do not want to pay \$10 per month.
Why do we have to pay \$10 for a second pickup when other places get secondary pick up for free

Yet! I like it. It's a good thing.

You guys rock...hard working, very good program, want to see program expand

Want to stay with old way

Would like twice pickup for gray bin at no extra cost